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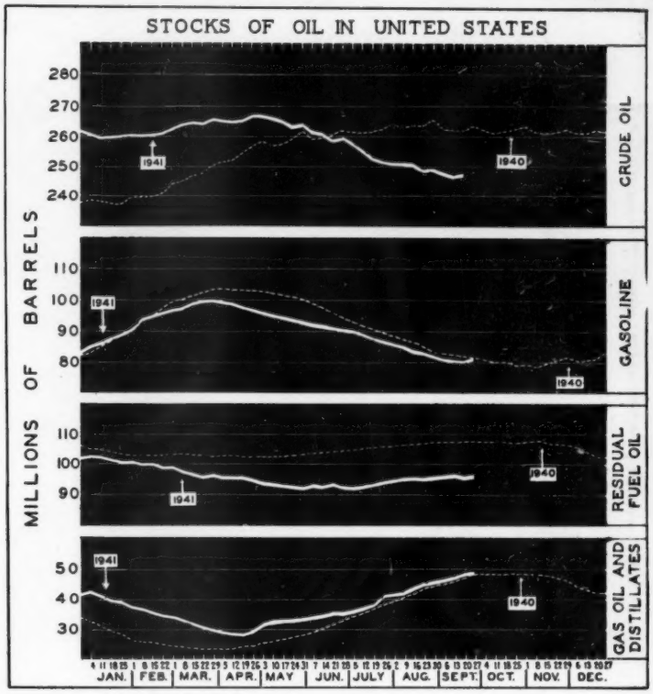
Trends

Aviation-Fuel Plan Discloses Defense Task for Industry



MORE hints of emergency tasks the oil industry may be expected to perform in the national-defense program have come from Washington, D. C. Petroleum Coordinator Ickes, responding to a question in his weekly press conference, said the refining branch of the industry must increase its production of 100-octane gasoline threefold. Hasty estimates, apparently based on average capacities of 100-octane gasoline plants now operating, concluded that 50 new units will be required and placed the probable cost at $150,000,000.

Enormity of the aviation-gasoline program gives cause for serious concern in the petroleum industry. It has been pointed out repeatedly by refinery technicians that manufacture of aviation gasoline is fundamentally limited by availability of cracked and raw gases. There is the danger, under the program outlined by Coordinator Ickes, that repair, maintenance and expansion equipment for basic refinery operations may fare a poor second in the distribution of steel under the preference rating plan. Evidence supports the contention that topping and cracking facilities must be maintained in close correlation with 100-octane gasoline capacity, certainly in all stages of operating efficiency.

CRUDE PRODUCTION *4,062,000 bbl. daily average—down 735 bbl. One year ago 3,799,547 bbl.*

CRUDE STOCKS *246,500,000 bbl. as of September 20 — up 336,000 bbl. One year ago 262,209,000 bbl.*

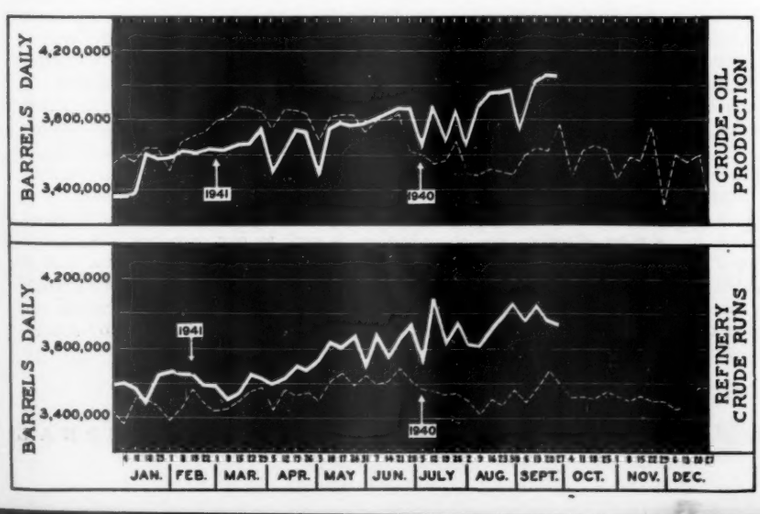
GASOLINE STOCKS **81,003,000 bbl. as of September 27—up 804,000 bbl. One year ago 82,146,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *95,251,000 bbl. as of September 27 — up 246,000 bbl. One year ago 107,470,000 bbl.*

GAS OIL AND DISTILLATES *49,950,000 bbl. as of September 27—up 1,043,000 bbl. One year ago 48,323,000 bbl.*

REFINERY RUNS *3,980,000 bbl. daily week ended September 27—down 15,000 bbl. One year ago 3,600,000 bbl.*

*Includes 7,396,000 bbl. aviation motor fuel, down 143,000 bbl. One year ago 5,986,000 bbl.



Another cause for concern are the developments in Washington with respect to California producing operations. The coordinator has indicated dissatisfaction by ordering a new conservation plan.

The industry is now supplying daily demand for 4 million barrels of petroleum. In meeting these requirements, the industry is resorting to all the ingenuity for which it is famous, principally in the transportation phase of its operations. Most of the initiative in arranging speedier transportation has been taken by the industry. Actions taken and others contemplated in using facilities not normally employed in moving oil into consuming areas may be insufficient but the industry has demonstrated its determination to engage every tool placed at its disposal.

Hopes for relief from the Government's policy of holding petroleum prices to preemergency levels were revived last week when Pennsylvania Grade producers presented their case before Leon Henderson, price administrator. Mr. Henderson pledged that no action will be taken which would prevent the production of an adequate supply.

For the industry at large, Mr. Henderson's declarations contained a note of encouragement. The industry's confidence in its ability to produce sufficient oil for all requirebillion barrels of petroleum. In meeting these requirements, ments has been limited only by previous indications that it might be denied a reasonable return.

DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 27, 1941	Bur. Mines Sept. est. of demand	Sept. state allowables	Sept. 20, 1941
Arkansas	75,575	79,000	76,000	75,810
California	635,250	634,700	610,000	648,550
Eastern fields	111,900	121,200	.....	112,000
Illinois	416,965	392,500	.....	407,415
Kansas	258,650	239,800	248,800	258,800
Louisiana	335,295	324,000	328,650	334,940
North Louisiana	*80,195*	.....	.....	*81,190*
Louisiana Gulf Coast	*255,100*	.....	.....	*253,750*
Michigan	52,980	39,500	42,000	52,010
Mississippi	54,695	33,000	.....	55,220
Nebraska	7,100	5,000	.....	7,150
New Mexico	114,640	113,200	113,200	114,640
Oklahoma	424,550	489,800	428,000	422,250
Rocky Mountain states	115,550	109,700	.....	111,700
Texas	1,458,850	1,378,600	1,357,000	1,462,250
East Texas	*369,700*	.....	.....	*369,600*
West Texas	*278,900*	.....	.....	*279,050*
North Central Texas	*134,700*	.....	.....	*132,900*
East Central Texas	*85,000*	.....	.....	*84,750*
Texas Panhandle	*80,250*	.....	.....	*86,200*
Texas Gulf Coast	*415,250*	.....	.....	*415,200*
Southwest Texas	*95,050*	.....	.....	*94,550*
Total United States	4,062,000	3,960,000	.....	4,062,735

Total production, Jan. 1-Sept. 27 ..... 1,007,894,140 bbl.
Same period last year ..... 1,003,937,439 bbl.

Hundreds of vapor-tight tanks scattered throughout the major refining areas in the United States are slowly but surely being filled with high-octane aviation gasoline components. This is a scene in a Texas Gulf Coast refinery and is typical of the type of tankage used

WASHINGTON, D. C., Sept. 29.—This country's capacity to manufacture 100-octane aviation gasoline will be trebled, according to a program discussed briefly here this week by Petroleum Coordinator Ickes. The plan calls for the construction of about 50 new major refining units to cost in excess of $150,000,000. Mr. Ickes stated that following conferences with refiners and Federal Loan Administrator Jesse H. Jones, a tentative program had been agreed upon whereby the Defense Plant Corp., a subsidiary of the Reconstruction Finance Corp., would advance the needed funds. Explaining that the program would be flexible, he indicated that some units might be built with private capital others built privately under federal loans, and others by the Government and leased to the operators. The present output of this fuel is 40,000 bbl. per day. He predicted the demand would approximate 120,000 bbl. daily by next summer.

"This refinery-expansion program has already been started," Mr. Ickes explained. He is now concerned with contract forms with Mr. Jones. Prospective operators of the new units are expected to meet with the coordinator within the week. The new plants are to be preferably scattered throughout the oil-producing fields, and will take about 9 months to build. A request for priorities for their construction and equipment is being prepared and will be submitted to the Supply Priorities and Allocations Board at an early date.

As a further step to avoid an impending shortage of aviation fuel, Mr. Jones is said to be planning to create substantial stocks. This will be accomplished by the Government's purchase of gasoline as made.

Study Plans to Treble Output Of 100-Octane Gasoline

By W. T. ZIEGENHAIN

INFORMALLY, Petroleum Coordinator Ickes has asked the refining industry to treble its capacity to produce 100-octane aviation gasoline. Several months ago the coordinator made a request under similar conditions that the industry double its capacity. The latter came when the industry's productive capacity for this type of material was 40,000 bbl. daily. Approximately 10,000 bbl. of additional capacity is under construction.

Refiners now generally understand the latest request to mean that the potential output of their plants must be raised to 120,000 bbl. daily and they are naturally concerned about the request because it involves unusually heavy expenditures. The idea of building that volume is so filled with uncertainties that subcommittees in the five recognized refining areas established under the OPC are taking weeks for just the collection of data before a final plan can be formulated by the industry or by the coordinator.

The pressing problems involve the question of speed with which the equipment may be delivered, the means for financing these units and the assurance that the demand for the products will be maintained long enough and at a reasonably high level to enable the refiners to pay out the investment. As a preliminary answer to some of these questions, Mr. Ickes has indicated that funds will be made available for the purchase of all stock to be segregated. These funds are available under the lease-lend law. Furthermore, the rate of producing airplanes in the United States, coupled with that of England and Russia, will soon reach a level which will absorb the suggested capacity.

Supply Needs Abroad

It will be remembered that under the Government's national-defense program, the refining industry was asked to provide an output of 40,000 bbl. of 100-octane gasoline daily. At the time the program was formulated, authorities in the oil business indicated that this output could be developed well in advance of this country's ability to build the engines which would need this type of fuel.

Thus far there has appeared no disagreement on this point and when a representative of the Navy's purchasing office was asked whether the Navy had had trouble in locating supplies, he replied that every order had been filled promptly and that he anticipated no trouble in getting additional supplies as the Navy's demand increased.

This statement was offered in the past week after it became known that no refiner had bid on a tentative order for 600,000 bbl. of 100-octane gasoline, placed through the Navy's purchasing offices. However, since the Navy makes purchases for other countries, the request no doubt came unexpectedly, under the lease-lend arrangement. This explains why the assumption was made that our Navy could not be satisfactorily supplied.

Regardless of the disposition of this question, it appears now that refiners in the United States are expected to fill the needs of not only this country under the defense program, but those of England and Russia under war conditions.

England's need for 100-octane gasoline is said to have risen from 5,000 bbl. per day at the start of the war to about 36,000 bbl. per day at present. Russia's needs at the beginning of the hostilities were apparently very small but its needs now are said to be close to 25,000 bbl. per day. The needs of the United States by the end of 1942, assuming we undertake to use the planes and tanks now under construction in maneuvers or combat, have been estimated at 50,000 bbl. per day.

Thus, if we are to supply the needs of England and Russia, as well as our own, we will have a place for 111,000 bbl. daily. We hear talk also of our supplying planes and tanks for a Free French army and a Polish army and their demands for 100-octane fuel will no doubt be filled by American refineries.

All of this 100-octane gasoline of course will not be used for airplane motors, as some of it will be used in tanks. High-compression motors have been developed for both services but there is little question but that the great bulk of this gasoline will be consumed in the air. This is especially true if the vast fleets of multimotor bombers which are actually on order in American plants are built and delivered for combat.

Military strategists now agree that air supremacy is prerequisite to any successful ground operation. If the United States is to supply the means for the successful termination of the war on the part of England and Russia, it will mean that we will need to build more and faster ships than Germany. Apparently the strategy of England and Russia will be to utilize the vast resources of the United States in making and supplying fuel for airplane engines which will carry bomb loads higher and faster than the Germans can. It is significant that among the recent large orders to be given American airplane manufacturers was one for 1,000 bombers to travel in the substratosphere or at an elevation of 15,000 ft. The present-day bombers powered with 87-octane fuel cannot go above 12,000 ft. with a normal load.

Tests on the gasoline taken from the tanks of fallen German airplanes have recently shown the gasoline to be of 75 to 91-octane value. If the United States can produce adequate quantities of 100-octane gasoline and a sufficient number of engines to fully utilize this quality of material, English and Russian airmen will be able to establish themselves above the atmosphere in which the German planes will operate and by this means it is assumed the English and Russian airmen will gain and be able to hold supremacy of the air and the surface at any point.

In the light of these developments, Mr. Ickes' recent request for refining capacity to assure the production of 120,000 bbl. of 100-octane fuel daily appears reasonable and his adjustment upward of the quantity needed can be understood since passage of the lease-lend bill.

If this type of military strategy is to be developed, then it is the purpose of the oil-refining industry to produce the 120,000 bbl. of 100-octane gasoline needed. To do this the refining industry will need to adjust its present operations by the installation of additional alkylation units, catalytic cracking plants and by installing any one of the isomerization units available. To develop an output of 120,000 bbl. of 100-octane gasoline daily, will mean a proportionate decrease in the output of automotive gasoline unless larger quantities of crude are refined. At present the output of motor gasoline closely approaches 2,000,000 bbl. per day so the loss of 120,000 bbl. of light fractions that serve as charging stocks for alkylation units, etc., does not introduce a serious problem with respect to supplying our needs of ordinary gasoline.

The synthesis of high-octane aviation gasolines as a result of the pyrolytic and catalytic reformation of crude oil and natural-gas fractions is summarized most effectively by T. B. Leech, starting on Page 40 of this issue. In it he deals specifically with the economics of manufacturing these special gasolines under the country's defense and lease-lend program.

Just how the refining industry will increase its production of 100-octane gasoline suggested by Mr. Ickes is not easy to predict; however, there remains little doubt but that it can be done if an emergency need exists. The refining industry can develop this volume of production through the suggested installation of alkylation and isomerization units but the cost will be high. The latter has been estimated at $150,000,000 and the time for erection will extend over most of a year, even assuming emergency preference is given the alloys needed for these plants. The units will no doubt be scattered throughout the country and preferably at or near existing refineries. As many as 50 such units have been suggested, each to cost about $3,000,000. Some will probably be located in areas where large quantities of natural gas are produced so that the isobutane and butane of the natural-gasoline plants may be used. Others will be located near a group of small refineries and the butane, isobutane and pentanes of these plants will be piped or shipped by rail to these plants. In some instances, preferably in the larger refineries, the installation of catalytic cracking units and hydrogenation equipment will be undertaken for with these it is possible to produce gasolines directly to make blends of 92 to 100-octane value with isooctane and tetraethyl lead.

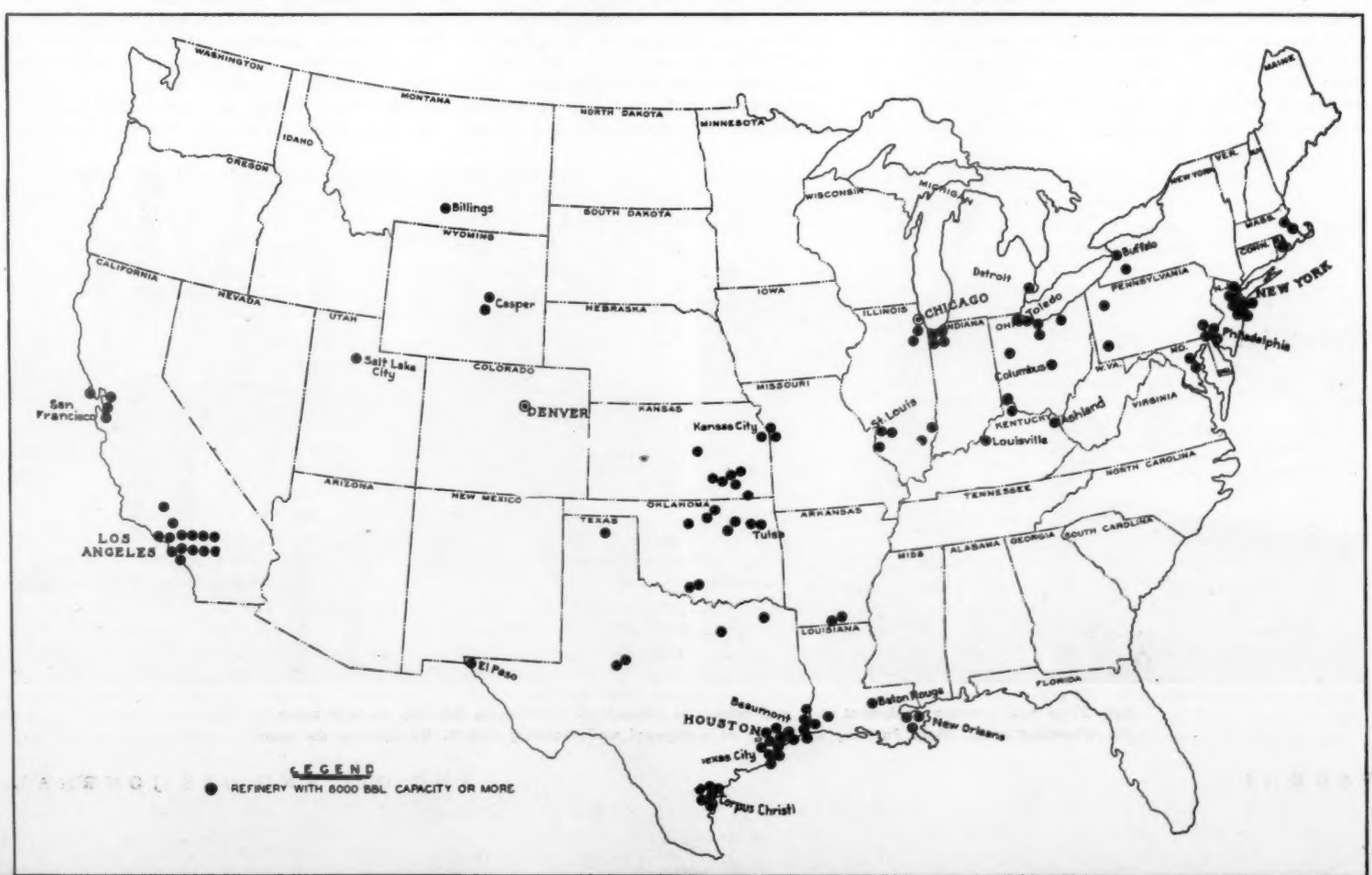
The bottleneck here will be the availability of isooctane but the plants in which this will be made will no doubt become a definite part of the finished emergency construction program. Unfortunately, however, the manufacture of isooctane is relatively complicated and if isooctane is to represent a substantial portion of the 100-octane gasoline blend, the task of building suitable plants for its manufacture will be a major undertaking.

Great Economic Study

The allocating of one type of plant to operate at one location or another, depending upon the nature and quantity of charging stock available, will come up for study in the immediate future among the men charged with administering the coordinator's plan and no doubt they are viewing with interest the wide difference in these supplies among the 460 operating refineries scattered throughout 36 of the states. However, many of these plants are too small to participate in the plan of hastily developing an output of 120,000 bbl. daily of 100-octane gasoline. There are sufficient plants in 14 states to adequately supply the charging stock for the new units most quickly and most economically.

The accompanying map indicates the location of all refineries in the United States which have a crude capacity of 8,000 bbl. or more per day. These plants will no doubt receive preferred attention in the committee's studies and the coordinator's final recommendation.

Each dot represents a refinery of average or larger crude capacity. These are sufficient in number and distribution to provide entirely for expansion of the output of 100-octane gasoline to the 120,000 bbl. per day requested by Coordinator Ickes



Salt Water Threat to Proration Benefits in East Texas

By D. H. STORMONT

FORT WORTH, Tex., Sept. 30.—The East Texas field early in October will enter its twelfth year of oil production. This world's largest oil field, extending over 133,000 acres and containing almost 26,000 producing wells, has yielded about 1,678,127,000 bbl. of an oil reserve estimated at 4,500,000,000 to 5,000,000,000 bbl. With the exception of its early life when withdrawals were entirely uncontrolled, East Texas has been produced along rather conservative lines. The steadily growing volumes of salt water being produced with the field's allowable oil production, however, threatens to discount many of the benefits obtained from the restricted withdrawal rates of the past 8 years.

Discovered and developed during the depression years of the early thirties, East Texas created chaotic conditions in the industry when it was permitted to flow unchecked, at time exceeding 1,400,000 bbl. of oil daily. In 1933 when withdrawals were at record levels, East Texas' output represented over 50 per cent of the state's oil production and about 22.5 per cent of that of the entire nation. Action by the state and federal governments, as well as the entrance of new oil fields, has reduced the field's proportion. Today East Texas produces some 25 per cent of Texas' total output and 10 per cent of that of the United States.

This month and during most of the past year, East Texas' allowable oil production has been held at approximately 360,000 bbl. daily. At this level all wells except marginal wells are given a theoretical allowable of 20 bbl. daily. Through use of shutdown days, though, wells are actually allowed to produce less than 15 bbl. daily.

Most authorities on East Texas believe that, on the whole, the field's withdrawals have been kept well within proper pressure-production relationships. Some feel that total fluid withdrawals of 600,000 to 700,000 bbl. daily are not excessive. However, the most recent water survey of the Railroad Commission (April 1941) reveals that brine production has increased to 387,000 bbl. daily, placing total fluid withdrawals in the neighborhood of 750,000 bbl. daily.

East Texas today is faced with a serious water problem. The field has produced only one-third of its estimated oil reserve of 4½ to 5 billion barrels, and in so doing the reservoir pressure dropped some 600 lb. With 3 to 3½ billion barrels of recoverable oil still in place, bottom-hole pressures can decline only about 240 lb. before the average oil saturation pressure is reached. Much of this recoverable oil could be flowed from the reservoir during coming years, but if present rates of fluid withdrawal are maintained without the salt water being returned to the producing sand, production costs will be increased and the ultimate oil recovery lowered. In some fields a lessened oil recovery of just 5 per cent may mean only a few thousand or few hundred thousand barrels. In East Texas it represents 150 to 175 million barrels.

Thus the field has reached a stage where control of the reservoir pressure can no longer be accomplished simply by controlling the rate of withdrawals. Either more of the produced water must be returned to the oil sand or a widespread plug-back campaign be undertaken to reduce materially the volume of water now being produced.

The commission figures as of April 1 show that the 387,000 bbl. of daily water production are being withdrawn from 4,463 wells. Of this total volume 176,651 bbl. is being produced by 757 marginal wells and 211,001 bbl. by 3,606 prorated wells. Other data from the survey and a comparison with surveys since 1937 are given in Table 1.

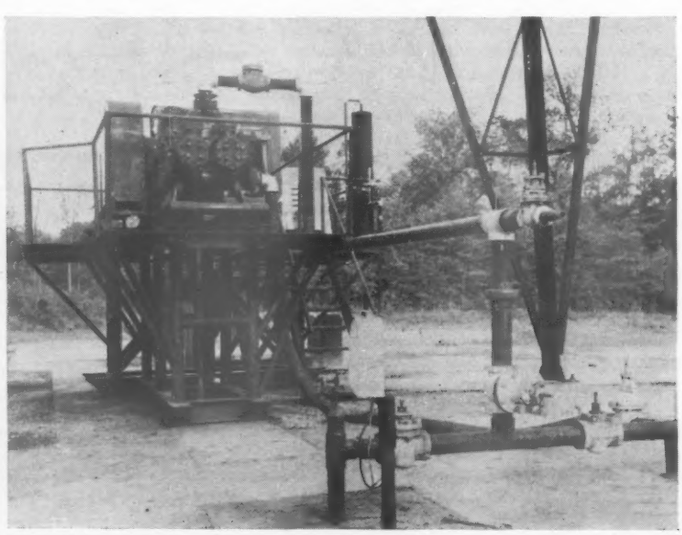
It will be noted there is a decided jump in water production in the April 1941 figures over those of November 1940. This is believed to be largely the result of more stringent requirements by the commission in the filing of well-status reports (Order 120, March 5, 1941), and not a sudden increase in the rate of water production. For this reason the most recent figures are not directly comparable with previous water reports.

From past experience with Woodbine sand fields, early in East Texas' life it was recognized there would be a strong water drive, and that operators would have to contend with the disposal of large volumes of salt water. Thus the increased salt-water yield does not mean the field as a whole is in danger of going to water, but rather that the water is continually replacing oil as it is produced.

Operating Costs Increased

The higher rates of water withdrawals do have an adverse effect on bottom-hole pressures, however, causing increased lifting costs and lowering ultimate oil recovery. Also operating costs are increased due to operators having to handle and dispose of the water.

The most recent pressure survey for the commission (in September) reveals that the bottom-hole pressure had increased 0.45 lb. since the August survey to an average of 1,038.9 lb. East Texas authorities, however, place little emphasis on the result of any one survey, but rather on the trend of several months. For that reason the



Left: Filter and metering equipment at a well where no pressure is required for injecting the salt water to the Woodbine sand. Right: Pumping equipment at a disposal well requiring 150 lb. for injecting the brine

TABLE 1—TRENDS IN WATER PRODUCTION, PUMPING, GAS LIFT AND WATER WELLS IN THE EAST TEXAS FIELD

	1938				1939				1940			1941
	Jan.	April	July	Oct.	Jan.	April	July	Nov.	April	Sept.	Nov.	April
Flowing wells making water	978	1,044	886	843	991	1,031	933	873	949	793	905	759
Pumping wells making water	2,389	2,615	2,617	2,780	2,830	3,014	3,047	3,197	3,337	3,223	3,496	3,682
Pumping wells not making water	2,521	2,544	2,884	2,793	2,794	2,772	2,793	2,871	2,905	3,007	2,832	3,146
Total pumping wells	4,910	5,159	5,501	5,573	5,624	5,786	5,840	6,068	6,242	6,230	6,328	6,828
Air and gas-lift wells making water	97	121	149	154	200	221	341	335	331	320	386	458
Air and gas-lift wells not making water	351	343	357	366	403	369	352	385	454	447	463	429
Total air and gas-lift wells	448	464	506	520	603	590	693	720	785	767	849	887
Wells making water	3,475	3,780	3,662	3,777	4,021	4,266	4,321	4,428	4,416	4,331	4,787	4,363
Daily water withdrawals, bbl.	85,133	91,831	103,136	106,964	122,807	132,858	148,678	199,738	179,681	187,811	205,492	387,653
Av. daily water withdrawal per water well, bbl.	24.49	24.29	28.16	28.32	30.54	31.14	34.41	45.11	38.93	43.31	43.02	100.68

TABLE 2—YEARLY PRESSURE-PRODUCTION DATA OF THE EAST TEXAS FIELD

	Ave. b. h. press, Dec. 31 (lb./sq. in.)	Yearly pressure decline (lb./sq. in.)	Total oil production (bbl.)	Est. total water withdrawals (bbl.)	Total corrected vol. displacement in reservoir (bbl.)	Press. drop per million bbl. displaced (lb./sq. in.)	Press. drop per million bbl. oil produced (lb./sq. in.)
1935	1,204.1						
1936	1,174.6	29.5	164,789,000	10,980,000	141,163,000	0.209	0.179
1937	1,126.5	48.1	169,238,000	23,615,000	157,313,000	.306	.284
1938	1,106.3	20.2	148,319,000	37,220,000	154,392,000	.131	.136
1939	1,065.6	40.7	146,970,000	53,568,000	169,674,000	.241	.280
1940	1,053.7	11.9	139,094,000	69,459,000	179,343,000	.066	.085
First 8 months, 1941	*1,038.5	15.2	†87,562,000	77,805,000	146,979,000	.103	.173

*Pressure reported for August 1941. †Estimated.

slight increase over August is not regarded as pertinent. Yearly pressure-production data from 1935 to 1940 and for the first 8 months of this year are shown in Table 2.

Authorities on East Texas generally agree that the average saturation pressure of the oil is approximately 800 lb.; i.e., the pressure at which gas will be freed from the oil. Extrapolation of the bottom-hole pressure curve (Fig. 1) at the rate of decline registered during the latter half of 1940 and so far in 1941, reveals that this pressure would be reached early in 1952.

This extrapolation, though, fails to take into consideration the increased volumes of salt water that will be produced during coming years. Due to the inaccuracy of salt-water production data prior to April 1941, as explained earlier, the present rate of increase in water production cannot be accurately estimated. Some authorities believe that if oil production is held at its present

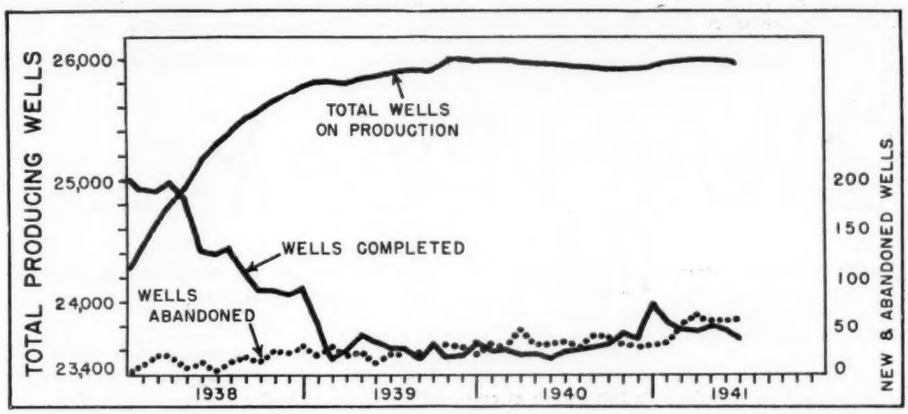


Fig. 2—Trend in the number of wells completed and abandoned and the total number of wells in East Texas

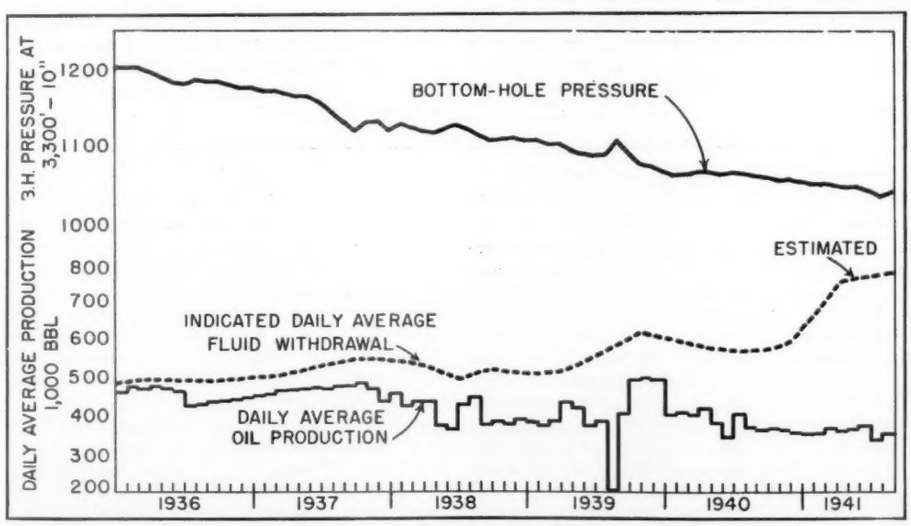


Fig. 1—Pressure-production relationship in the East Texas field from 1936 to August 1941. Note that although oil production is being held at a constant level the total fluid withdrawals are constantly increasing

level and no remedial measures undertaken, water withdrawals will reach 1,000,000 bbl. daily—that it is only a question of time until such proportions are reached. Some believe that the field will be producing 600,000 bbl. daily within 2 years.

Some operators and engineers think that the water-withdrawal curve will tend to level off in the immediate future; that the rate of increase is now at its highest slope. Those who feel this way point out that as the water moves farther upstructure a larger space will have to be filled, due to the thicker sand section, before wells will begin to make water. Also that continual abandonment of large salt-water producers will offset upstructure wells beginning to produce water, and the higher percentages made in other wells.

In any event the amount of salt water produced is expected to increase and will have the same effect on reservoir pressures as if that much oil was produced. The result of the higher fluid withdrawals will be that the saturation pressure will be reached much earlier than 1952, probably within the next 6 or 7 years, unless steps are taken to remedy the situation.

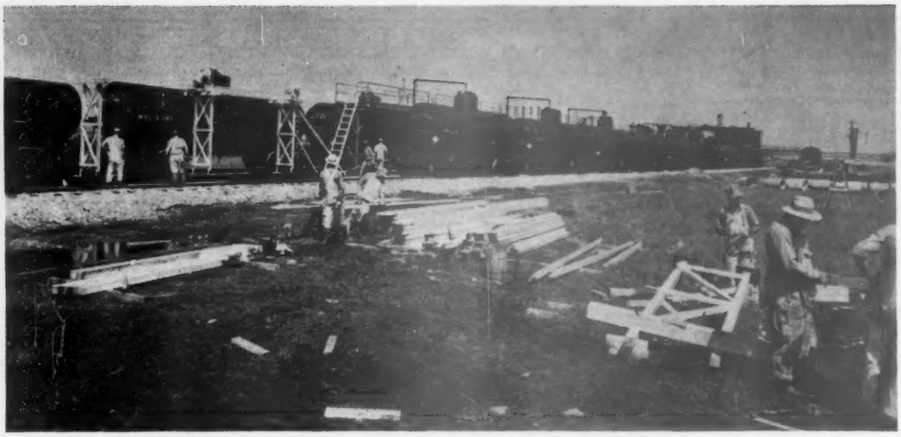
The increased water withdrawals are not due to a large number of wells beginning to make water, but are caused by existing water wells making large percentages of water. In fact, commission figures show the 4,363 water wells on April 1, 1941, was 424 fewer than in November 1940. West-side water wells are continuously being abandoned, though (see curve in Fig. 2), as the water level moves higher.

Water Confined to West Edge Wells

In general the water is confined to west-edge wells. However, further in field some large tracts have "pincers" moving in, threatening to completely encircle them in the near future. This is due to more densely drilled tracts farther upstructure taking too large withdrawals and causing water to encroach more rapidly.

Curbing of the field's large salt-water flow is made difficult by the fact that 176,000 bbl. of the 387,000 bbl. daily total is being produced by marginal wells. These wells are not affected by the shutdowns and continue their water withdrawals when wells not making water are shut in. Furthermore, the number of marginal wells is steadily increasing so that the volume of water produced by wells of this classification will probably continue to rise.

The salt-water problem is further complicated by reason that some 70 per cent of the water is being produced by wells making over 90 per cent water. Many of these west-side wells are drilled or have been plugged back until only the top of the pay is penetrated. Further plugging back is impossible or impractical as plugging back of large salt-water wells has not proved very successful. Abandonment of these wells, even though they make as much as 99 per cent water, is not legally possible as long as it is profitable to oper-



Pan American Petroleum and Transport Co. lost no time in starting loading over its new rack at the Texas City, Tex., refinery. Part of the rack was pressed into service while other sections were still under construction. Deliveries at the rate of 60 to 80 cars per day are to be made to an affiliate, American Oil Co.

This Week...

Gulf Coast gasoline prices were advanced 0.125 cent per gallon by most sellers. A few Mid-Continent natural-gasoline manufacturers upped their prices 0.125 cent in the general strengthening of markets.

●

Coordinator Ickes is making his first gesture at controlling production. He ordered a new conservation plan for California after rejecting one as insufficient previously submitted by the District 5 production committee.

●

Died: Axtell Julius Byles, 60, president of the American Petroleum Institute and former chairman of Tide Water Associated Oil Co. At his home at Ardsley-on-Hudson, N. Y., September 28.

●

Texas, Louisiana and Kansas set their proration allowables for October above estimates of demand made by the Bureau of Mines.

●

Recommendation that the petroleum industry "be placed in its proper position under the priorities system" as quickly as possible to maintain and expand its utility in the defense program was made to OPM in a report signed by general chairmen of the five regional committees.

Report of the natural resources committee of the United States Chamber of Commerce opposed: (1) any change in the oil industry's depletion allowance; (2) divorcement legislation. Favored: (1) sane and sensible conservation; (2) full use of transportation facilities to relieve shortages.

●

W. L. (Bert) Childs, Houston, Tex., headed a delegation of supply men who conferred September 27 at Washington, D. C., with Donald M. Nelson, priority director, on a plan for steel distribution to the oil industry.

●

Twenty Norwegian tankers now in charter service for United States oil companies between this country and Latin America will be diverted to the British for a few trips as soon as present voyages are complete.

●

A committee is now exploring possibilities of increasing barge movement of petroleum to the East Coast through inland waterways and the coastal canal.

●

The slight decline of 735 bbl. in daily average production last week still leaves output higher than all but 1 week in the industry's history.

●

Oil industry and political leaders of Pennsylvania, New York, West Virginia and Ohio had their day in Price Administrator Henderson's court. Rising costs and greater demand justify removal of the ceiling on Pennsylvania Grade crude, they argued.

●

Tank-car owners had a surplus of 5,192 cars on September 7, the District 1 transportation committee determined by a telegraphic poll. In contrast, was the earlier declaration of J. J. Pelley, president of the American Association of Railroads, before the Senate committee, that 20,000 cars were idle.

●

Petroleum Coordinator Ickes requested and received assurance that he would be heard before the week ends by Senator Maloney's committee investigating East Coast petroleum shortages. He promised "important additional information."

ate them. Therefore, little can be hoped for in cutting the flow of water from these wells; they will continue to make these huge volumes until they are entirely flooded or their operation is uneconomical.

Plug-Back Work

As yet there has been no great amount of plug-back work undertaken, despite the increasing need for it. Thus some operators believe that if wells just beginning to make water (from 2 to 20 per cent) were corrected, the present water volume would be reduced at least a little.

The principal result of this plan, though, would be in prolonging the time interval before a producer would start making 95 per cent water. Also if only a small section of oil pay is penetrated, the length of time that a well would produce large percentages of water would be materially shortened. Since the field is under strict proration and the oil is being steadily moved upstructure by the water drive, oil recovery from the plugged back well would not be affected.

From this it would seem that the solution to East Texas' salt-water problem apparently lies in the large-scale return of brines to the Woodbine producing section. The principal result would be the beneficial effect on the reservoir pressures, but in addition it would solve the increasingly difficult problem of water disposal. When the fields was producing only small volumes of water, disposal was a routine matter. With water withdrawals practically equaling oil production, disposal during dry periods now is adding greatly to production costs.

During the past year there has been no change evidenced in the rate that wells are being placed on the pump. Water encroachment is responsible for most of the wells requiring artificial lift. Furthermore, it is expected that rate of installation of lifting equipment will not change much from the present level. Most of the east-side wells having poor permeability or thin sand sections already have units installed. Thus installation of lifting equipment over the next 6 or 7 years will be brought about almost wholly by the salt-water encroachment. Growth in the number of pumping and gas-lift wells over the past 3½ years is shown in Table 1.

Progress in Water Injection

The July 1941 report of the Railroad Commission shows that over 61,000 bbl. of brine were being injected daily. The water was being returned through 41 injection wells and represented the output from 1,196 producers. That this method of disposal is very feasible is evidenced by the fact that some wells after receiving over 2,000,000 bbl. of brine still do not require pressure for the injection.

The state has encouraged this means of disposal by permitting the allowable of wells converted into injection wells to be produced by other wells on the lease. However, no concerted effort has been made by the commission or oil companies toward inducing operators to reinject their water production.

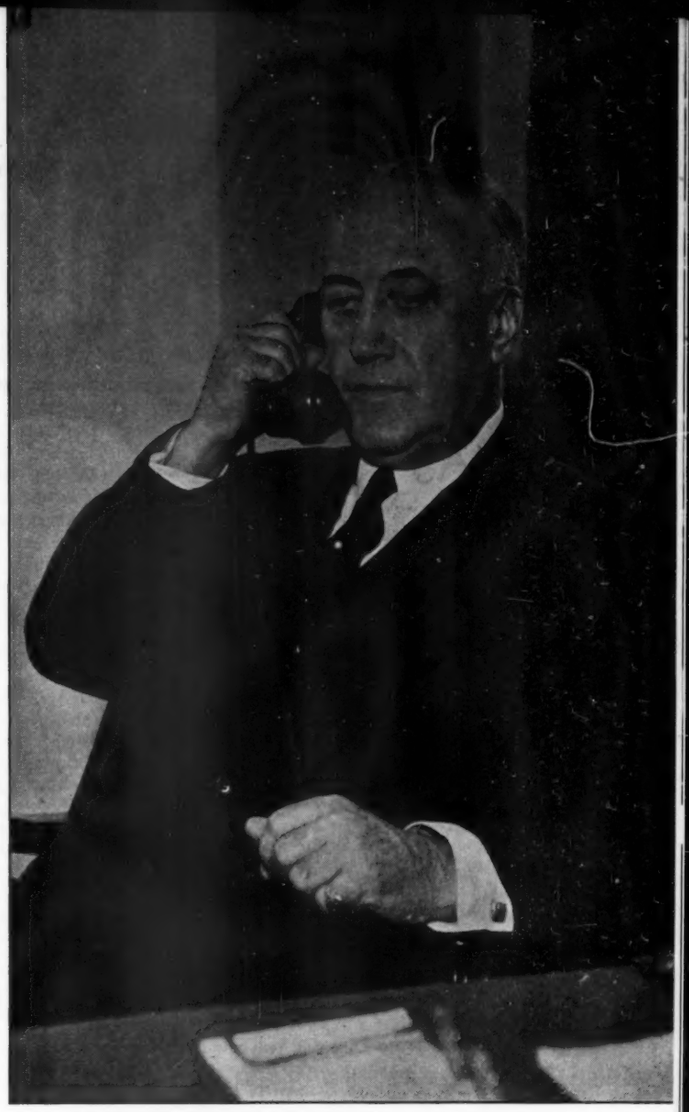
Several plans have been offered, but none has met with general acceptance. This is largely due to the fact that most of the large west-side wells are owned by small independents. And since they are about to be flooded out, these operators naturally have little interest in the welfare of operators in the fairway or east side.

East Texas operators are becoming more aware of the problem on their hands, though, and it is expected that some plan of water injection will be worked out in the near future. One plan currently under discussion is the formation of cooperative disposal projects of limited size; all water production from an area several hundred acres in size being handled as a unit. Disposal wells would be drilled for all water produced within the unit and cost of disposal shared among operators within the unit.

The commission has scheduled a hearing at Austin on October 6 for the purpose of airing proposed methods of solving the problem. Since there is such a wide variance in the desires of operators it is probable that no method will be formulated which will be entirely satisfactory to all. Thus it is expected that some compromise may be worked out, possibly in the form of higher allowables for wells from which the salt water is returned to the producing formation.

AXTELL JULIUS BYLES

1880 — 1941



DEATH of Axtell Julius Byles September 28 ended the career of the man who had guided the industry's largest national trade association, the American Petroleum Institute, through more than 8 years of the most turbulent period in the history of the oil business. Before accepting leadership of the industry in his capacity as president of the American Petroleum Institute, Mr. Byles, who was 60, had distinguished himself as an attorney and created an enviable record as an oil executive while serving in high offices of the Tide Water Associated Oil Co.

He resigned as chairman of Tide Water in May 1933 to accept the presidency of the A.P.I. at a time when the industry was struggling against a strong threat of federal control resulting from unsatisfactory state administration of East Texas. Mr. Byles was selected as one of the most able spokesmen in the ranks of the oil industry to defend it from unjustified attacks from federal and state governmental agencies at a time when pipe-line divorcement and centralized regulation of production were avidly advocated. One of his most brilliant defenses of the petroleum industry was presented before the Texas Legislature when Mr. Byles gave an eloquent account of the stewardship of the nation's oil resources. That was back in the days of 10 and 25-cent oil in East Texas when the industry was caught between inadequate state conservation laws and a lust for federal control over all phases of oil operations.

Later, Mr. Byles led the fight against bills presented in Congress that would have placed regulatory powers in Washington, D. C., over producing and exploratory operations.

During the last 2 years, Mr. Byles fought bravely against a blood-pressure condition that practically forced him into retirement. Despite his ill health, he maintained interest in the welfare of the industry and consulted on the broader and more vital policies of the A.P.I. as often as conditions would permit.

Private funeral services were held at Ardsley-on-Hudson, the family home, October 1.

He was born in Titusville, Pa., October 21, 1880, the son of Julius and Mary Axtell Byles. He graduated from Titusville High School in 1898 and attended Lawrenceville (N. J.) Preparatory School. He entered Princeton University in 1899 and graduated with Bachelor of Science degree in 1903. He spent 2 years studying law in a Pittsburgh office and was admitted to the Pennsylvania bar in 1905.

Mr. Byles conducted a private law practice in Titusville from 1905 to 1917 when he became general counsel for the Tide Water Oil Co., a position which required establishment of offices in New York.

He rose rapidly in the Tide Water organization, becoming a director in 1919, vice president in 1922 and president in 1924. When Tide Water Associated Oil Co. was organized in 1926, Mr. Byles became president and director. Later, the same year, he became president of the Associated Oil Co. of California and was elected chairman of that company's board in 1927.

Mr. Byles first became an officer of the A.P.I. in December 1927 when he was elected a vice president and automatically became a member of the executive committee. He continued as a member of the executive committee until November 1930. He was elected to the A.P.I. board in 1928. He was returned to the executive committee in 1931 and continued to serve in that capacity until elected president of the Institute at the mid-year meeting in Tulsa, May 17, 1933.

Mr. Byles had led a full and vigorous life. He played college football, tennis and in later years, before his health broke, was an ardent golfer. He derived much pleasure from hunting and other outdoor activities.

His interest in the legal profession and the oil industry were actually inherited. His father, a lawyer, was born in Venango County, Pennsylvania, in 1838, and died in 1906, a span of years that saw birth of the oil industry at Titusville.

Mr. Byles was a member of the Rockefeller Luncheon Club; Adirondack League; Ardsley Club; Cap and Gown (Princeton); Olympic Club (San Francisco); Manursing Island Club (Rye, N. Y.); Metropolitan Club; the Princeton Club of New York and the Racket and Swimming Club (Ardsley).

Mr. Byles married Florence Payne, at Titusville, on September 6, 1905, and is survived by her and by their two sons, Axtell Byles, Jr., of Mount Carmel, Ill., and Lt. Julius Byles of the 178th Field Artillery.

STATE CAPITALS...

TEXAS

FOR THE FIRST TIME IN MANY MONTHS the Railroad Commission exceeded the Bureau of Mines demand estimate in fixing the October production allowable. The liberalized October order called for only 9 shutdown days for all the state, including the Panhandle (which had four in September), told operators they could produce 1,485,966 bbl. a day—70,626 bbl. more than during the current month and 65,866 bbl. more than the bureau's estimate.

Panhandle operators, who plumped for a greater increase because of the use of their oil for aviation gasoline, were prorated on a new formula basing allowables 75 per cent on wells and 25 per cent on acreage. The new formula replaces the straight per-well pattern and assigned a top net allowable of 84,000 bbl. daily, an increase of 2,300 bbl.

Nonproducing days, for which adjustments were made in the daily allowable announced, were October 4, 5, 11, 12, 18, 19, 25, 26, and 31. Exemptions from the shutdown order were continued.

A breakdown of the expected net daily allowables under the October order as compared with allowables of last week show the increases to be spread to districts in this manner:

Southwest Texas, 240,733 bbl., up 12,411 bbl.; Gulf Coast Texas, 272,294 bbl., up 13,299 bbl.; East Central Texas, 86,267 bbl., up 1,237 bbl.; East Texas, 366,545 bbl., up 11,544 bbl.; West Central Texas, 49,499 bbl., up 1,486 bbl.; West Texas, 262,345 bbl., up 13,509 bbl.; North Texas, 124,283 bbl., up 4,996 bbl.; Panhandle, 84,000 bbl., up 2,224 bbl.

Changes in field allowables were few under the new order.

Meanwhile, the attorney general completed brief and sent it to the Court of Civil Appeals at Beaumont appealing from a temporary injunction granted Continental Oil Co. against the Railroad Commission preventing it from applying its regular proration formula in the Driscoll field, Duval County.

OKLAHOMA

FOUR NEW POOLS were brought under proration by the state Corporation Commission and allowable production for October was left unchanged at 428,000 bbl. daily, the highest in 2 years.

Most important area added was the Apache field of Caddo County, which was given an allowable of 3,000 bbl. daily, or 300 bbl. per well per day.

The new Walnut Bend field, southwest of Boley in Okfuskee County, was given an allowable of 650 bbl. daily.

With the outlines of the Hotulke and West Hotulke fields still in doubt, and strong belief that they will be united, the commission set up the West Hotulke-Viola zone with an allowable of 500 bbl. daily, and the second Wilcox zone with 800 bbl. daily.

A 3,000-bbl. increase was granted to the Cement field, to bring total to 16,000 bbl. daily, making it the second largest prorated field in the state. The Oklahoma City Wilcox is first with 74,500 bbl. daily, a reduction of 2,500 bbl. from September, and the West Hewitt is third with a quota of 11,000 bbl. daily.

The seven fields in Class B group were granted a total allowable of 93,275 bbl. daily, an increase from 87,425 bbl. in September. Total for the prorated fields is 203,775 bbl., and for the unprorated, 224,225 bbl. daily.

Tentative allowable of 4,200 bbl. daily was set for the Hobart field of Kiowa County, pending the commission's decision in a suit on adjustment. No allowable was set for the East Cromwell extension since hearing has been continued until October 10; wells in this field are producing 300 bbl. daily, but there has been a charge of gas waste.

MICHIGAN

THE STATE OIL ADVISORY BOARD at Lansing, Mich., last week ordered further study of conditions in the Reed City field before acting on a new proration order, which now provides allowable at 480 bbl. a day from each well.

The board also conferred with representatives of the petroleum coordinator concerning steel priorities and well spacings but took no pertinent action.

KANSAS

ANOTHER RECORD ALLOWABLE was set by the Corporation Commission for October, up 7,700 bbl. a day from the previous month. The October allowable of 256,500 bbl. a day included 253,000 bbl. for wells now on production and 3,500 bbl. for new wells expected during the month. The figure compared with the Bureau of Mines estimate of demand of 253,000 bbl. a day for Kansas.

ARKANSAS

MOVING TO CONSERVE SOUR GAS reserves in South Arkansas, the Oil and Gas Commission slashed the daily allowable of the McKamie field in half—from 400 bbl. daily per well to 200 bbl.

The field, constituting the state's greatest gas reserves, has been the center of controversy before the commission over disposal of the gas which currently is flared—burned at the wells.

Other "flash" Arkansas fields also were cut, the Magnolia field taking a 5 per cent slash to 10,959 bbl. daily; the Atlanta field 10 per cent to 2,604 bbl., and the Dorcheat pool from 2,160 to 1,540 bbl. on an 8,000-cu. ft. volumetric-control basis.

The new Macedonia field's allowable was set at 400 bbl. daily until the second well is completed at which time the allowable will become 250 bbl. per day per well.

The commission designated the new production area developed by the Tide Water Associated Oil Co. and Seaboard Oil Co. in Lafayette County as the Patton area and granted the discovery well a 400-bbl. daily allowable.

The state's flush fields' production for the next 30 days was fixed at 47,066 bbl. over-all daily.

LOUISIANA

OCTOBER ALLOWABLE WAS SET by the Department of Minerals at 339,233 bbl. for all Louisiana fields—10,587 bbl. more than the September allowable and 7,233 bbl. above the Bureau of Mines estimate of demand for October. North Louisiana fields were upped only slightly from 70,273 bbl. to 71,064 bbl. Southern fields were upped from 258,373 bbl. to 278,169 bbl. Minerals Director Joseph L. McHugh said some of the fields would not be able to make their allowables, and would balance actual production with the bureau's estimate of demand.

CALIFORNIA

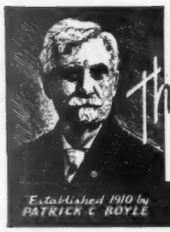
THE CONSERVATION COMMITTEE of California Oil Producers, official curtailment agency, after considerable study of past and probable future developments voted to set the October crude-oil allowable for the state at 613,200 bbl. daily. This is 3,200 bbl. per day higher than the September allowable and is in harmony with the estimate of demand by the Bureau of Mines. The committee was expected to reduce the allowable in October but members believed that crude-oil demand would continue at a high level. Beginning October 1, Tide Water Associated Oil Co. will take only 50 per cent of the allowable of operators from whom it buys current production. This brings up the question as to what producers will do with the balance of production as no other buyer is anxious to extend purchases. In case of Tide Water, it is a matter of lack of storage facilities. Crude-oil production has been running considerably above the established allowables but this reflects an unsettled condition.

MISSISSIPPI

INCREASED SEVERANCE TAX on oil production will be recommended to the 1942 state legislature, Gov. Paul B. Johnson said last week. At the present time the state's 2 per cent levy brings in an average of $1,080 a day from the 250 wells in the Tinsley field. The governor said he would ask that the levy be increased to 5 per cent to compare with the Louisiana tax. A similar recommendation was sidetracked by the 1940 assembly which met when only a few wells were producing in the field.

NEW MEXICO

ALLOWABLE PRODUCTION FOR OCTOBER for New Mexico was set by the Conservation Commission at 114,600 bbl. daily in conformity with the recommendation of the Bureau of Mines. It represented an increase of 1,400 bbl. from that for September.



the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Emergency Requirements

The ability of the oil industry to meet an increasing demand for oil is due in the first instance to the efficiency of the exploration departments. The maintenance of low prices to the public for petroleum products depends greatly on keeping the cost of discovery and development of crude-oil reserves as low as possible. The efficient organization of a long-range program whereby the $15,000,000,000 oil industry can continue to provide a better product at less cost demands adequate reserves.

Exploration departments have met the demands of a growing economy. In 1940, the number of wildcat wells drilled was 25 per cent greater than in 1939 and the percentage of successful tests rose from 10½ to 12½. During 1941 the tempo has increased and the percentage of successes will be as high as last year.

However, added to the normal growth of the industry, there has been imposed an emergency demand, not only for military purposes but also for civilian use. Employment has increased and with it there is a corresponding increase in the use of oil. If this emergency demand is to be met, it will require additional drilling, possibly even some "unnecessary" wells.

Recent publication of an appraisal of the resources of undrilled areas by a committee of geologists shows that the long-range problem is being studied and that this pioneering group stands ready to cross new frontiers in the search for oil.

But a long-range study will not satisfy a pressing emergency demand.

A year ago it was estimated that an additional million barrels a day could be obtained without increasing drilling operations. Half of this amount is now being produced and the trend is still upward. Increasing the supply of immediately available crude and maintaining that increase, however, are two entirely different problems and eventually drilling must increase.

When the pinch will begin to be felt is anyone's guess at present. Oil reserves are in the ground and cannot be measured exactly. Moreover the amount of our reserves is of less import than the rate at which we can draw on them. To say that we have 15 years' supply does not mean that we can produce it in that time. Some of this oil will not see a lease tank for 50 years.

The question we now must answer is how much oil can we get out of the ground during the next 2 or 3 years. If more is needed, how are we going to find it?

The exploration departments of the oil companies and the independent geologists are probably better qualified to answer these questions than any other group. They know the undrilled areas of proven fields and the possibilities of undrilled areas better than anyone else. The production departments can estimate the possible output with a very small margin of error.

The scientific training and technical knowledge of the industry's geologists and engineers will not lead them into announcing a surplus, only to have it dwindle in a few days to a sizable deficit. They have learned to exclude wishful thinking from their prognostications.

As highly trained technicians, they are in a position to advise Washington as to the production that may be obtained and the equipment necessary to find more oil and bring it to the surface. Despite the increasing difficulty of finding oil, they will find it provided neither officialdom nor management places obstacles in the way.

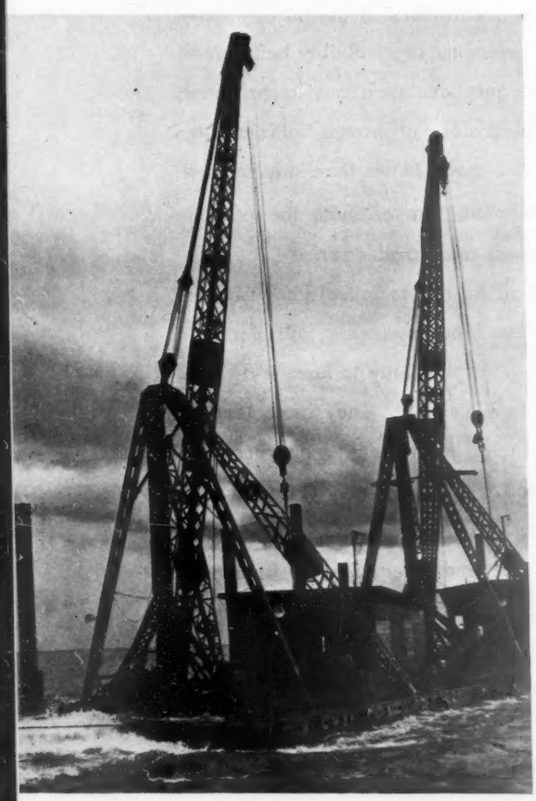
Wildcats today require heavy capital expenditures and they also require equipment. If a sound appraisal of the situation indicates that both are needed, they should be forthcoming. A government completely devoted to the problems of national defense will be wise if it recognizes the risks that the oil industry must take to make that defense secure. The industry can, as always, be trusted to get the job done.

Rapid Progress Being Made On Longest Marine Pipe Line

By R. MARNE SANFORD

SHREVEPORT, La., Sept. 30.—Out of the swamp land of southern Louisiana, across the Mississippi River and down under Lake Pontchartrain, thence eastward to Mobile, Ala., is the course of a natural-gas pipe line being constructed by the United Gas Pipe Line Co., Shreveport, La. The entire line, when completed, will approximate 200 miles in length. However, the 24½ miles which cross Lake Pontchartrain in coastal Louisiana will be the longest section of marine pipe line ever laid.

The line will originate in the southern Louisiana gas fields near Houma and will terminate in the area of Mobile, Ala., where a tie-in will be made to the company's existing Jackson-Mobile line and the Pensacola, Fla., lateral. Natural gas will be supplied to the shipbuilding and other industrial areas of southern Mississippi, Alabama and Florida, as well as the recently greatly enlarged United States naval base at Pensacola. The line will be of 10 to 16-in. pipe.



Above: One of the derrick barges being towed to anchor during the sudden rise of a swell on Lake Pontchartrain. High wind and storms caused suspension of the work several times

Right: Map of the line, showing how it cuts directly across Lake Pontchartrain, which is 24½ miles wide at the point of crossing. This is the longest section of marine pipe line ever laid

The Mississippi River crossings, there being three 10-in. lines laid this past July (see The Oil and Gas Journal, Sept. 18, 1941, p. 89), marked the completion of one of the first steps of the difficult engineering undertaking. The 200-mile project is roughly divided into three legs. The first leg is the line out of the gas fields, across the Mississippi River and across Lake Pontchartrain. The second leg is the completion of the line from the north shore of the lake to a point north of Gulfport, Miss. The third and last leg is from Gulfport to the area of Mobile, Ala. From the east bank of the Mississippi River to the southern shore of Lake Pontchartrain there is only 4 miles of link line needed to complete this lap. When the lake crossing is completed the second leg of the project will get started in full force. Many sections of this second leg are already under way.

Course of Line

The course of the line, in a straight direction, fell across Lake Pontchartrain, and considering the difference in cost per mile of marine-laid pipe and land line, together with the fact that by crossing straight over the lake much extra material could be saved, the marine route was chosen.

Lake Pontchartrain is approximately 38 miles in an east-west direction and 26 miles in a north-south direction. The pipe line crosses at an angle of about 45° east of north and at a point where the lake is 24½ miles from shore to shore.

The crossing of the lake, once started, was found to present more difficulties than had been anticipated, due more to a physical nature such as storms, high winds, and water, rather than engineering. Threatening storms in the nearby Gulf of Mexico have held up work at several different times since its start 11 weeks ago. Favorable weather was expected to follow the lowering of storm-warning flags this week on Lake Pontchartrain, and, meanwhile the rest of the job continued at other points.

There are being employed on the lake-crossing project two derrick barges, five tugboats, and the various crew boats, all of the fleet of Alexander & Co., New Orleans. The barges are of standard steel type, constructed so that at the stern of the craft are the welding clamps in which the ends of the sections of pipe are held while being welded to the main section.

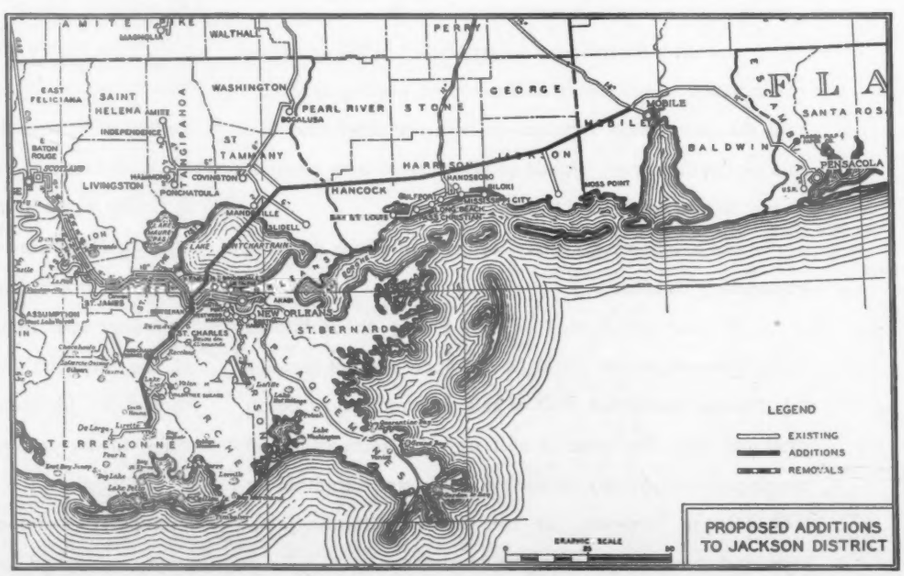
Types of Construction Employed

The first type of construction attempted was similar to that employed on the crossings of the Mississippi River. Pipe was welded into two-length "stalks" on shore and then hauled out to the work barges in the middle of the lake. Here it was lifted by derricks onto the barges and welded to the pipe already in the water. This method was proved impractical after the first stiff breeze arose. Even small waves caused the barges to pitch and toss too much for work to continue.

The method then used was to weld on shore sections of pipe as much as ½ mile in length. These were then slung beneath large pontoons and towed by the tugboats out to the work barges where they were welded onto the ends of the main line already in the water. The long sections of pipe proved somewhat cumbersome so that now the method used is to weld together on shore lengths of pipe composing a string from 800 to 1,000 ft. in length. These shorter sections are then buoyed up with four large pontoons, two at each end, and tugged out to the work barges.

All of the pipe is treated before leaving the home yard with a somastic coating. This coating is of an alkaline base which tends to prevent corrosion by neutralizing the acidizing effect of the

(Continued on Page 92)



PRIORITIES.

Answers to a few of the most pertinent questions asked about procurement of petroleum equipment

This is the fourth of a special-service series dealing with the answers to priority questions raised by operators in all branches of the petroleum and natural-gas industries and by manufacturers and suppliers of materials and equipment.

The Oil and Gas Journal has made arrangements to secure authoritative answers to questions arising on priority distribution of oil and gas operating equipment. Questions should be addressed to The Oil and Gas Journal, Priorities Question Department, P. O. Box 1260, Tulsa.

Previous installments appeared September 11, 18 and 25.

QUESTION: Does Order M-32, which regulates the distribution of potassium perchlorate, have any particular bearing on the petroleum industry?—S. E. W.

ANSWER: No. Reference in the September 18 issue of The Oil and Gas Journal to M-32, explaining that drilling and exploration equipment qualifies for a priority rating of A-10 under an interpretation of the regulations particularly applicable to the oil industry, should have referred to Title 32, Preference Rating Order P-22.

QUESTION: Does Preference Rating Order P-22 permit departments of companies and individual concerns engaged in petroleum exploration to apply A-10 priority rating on necessary supplies in compliance with regulations of the order?—J. K. K.

ANSWER: P-22 applies to repairs to equipment used in petroleum production, and production is interpreted to include exploration. Where a branch of a large company uses P-22 the order should be signed by an accredited officer of the firm.

QUESTION: We understand that on certain types of plant expansion the Government will allow depreciation on the basis of 5 years. This applies to refineries in which adequate evidence can be shown that the expansion will help the general situation. If this is the case, would appreciate your advising whom we must contact in order to obtain these certificates and any suggestions that you might have on the procedure.—M. M. F.

ANSWER: This has nothing to do with priorities. On certain types of plants needed for the defense program and likely to be of no commercial value thereafter, a certificate of necessity is issued permitting capital to be recovered in 5 years so far as income-tax laws are concerned. Write the Tax Certificate Section of the War Department.

QUESTION: Welding equipment, I understand, is now subject to priority preference rating of A-10 or better. Two questions arise. They are: (a) Is such a priority rating available for welding supplies to be used by British oil companies operating in Trinidad, British West Indies, and (b) what steps should we follow in obtaining this rating for each order?—I. F. B.

ANSWER: Welding equipment is subject to a preference rating of A-10 or better only if it is to be used in connection with some project officially rated a defense order and bearing such a preference rating. (*a*) Yes, if it is to be used in the construction or repair of oil-production or refinery equipment considered essential to defense, not if to be used for some non-essential, though perhaps related, purpose by the oil companies. (*b*) First get an export license from the State Department; then get an order from the British Purchasing Commission or the actual exporter; then apply to the Office of Petroleum Coordinator for a preference rating.

QUESTION: I have seen the statement that an export priority system on commercial transactions to Latin America has been established and that the commercial requirements of Latin America stand now on a par with the British Empire and ahead of Russia. Please advise on these three questions: (*a*) Are oil-well tools and supplies classified as "commercial transactions" under the above mentioned system? (*b*) what rating applies to Latin American commercial transactions? and (c) what steps should be followed in making application for priority rating?—B. I. F.

ANSWER: This assumption cannot be confirmed, but in exporting to any nation, first obtain an export license and then apply for preference rating on form PD-1.

QUESTION: Does order P-22 mean that we, as a supplier, must have previously received customer's order (with his statement on his order as specified under (d)-(1), before we can make the statement on our order to manufacturers, as specified under (d)-(2), to qualify for the A-10 rating with our source of supply?—J. F.

ANSWER: In general, yes. But some officials interpret P-22 to permit a supplier to originate an A-10 rating on material he knows from experience will be sold under P-22, provided he keeps a record of all material so acquired and does not sell it except on an A-10 order.

QUESTION: The term "maintenance" is not mentioned in Preference Rating Order P-22. We understand, however, that the order has been interpreted to include "maintenance" requirements as well as repair and to include materials for drilling and exploration. Is this interpretation correct?—F. J.

ANSWER: Maintenance is not included because of a fear it would be misinterpreted and abused. However, P-22 covers an interpretation of maintenance which is practically synonymous with repair and means replacement of worn or broken parts or maintenance of an emergency inventory of parts and supplies which are normally exhausted rapidly. P-22 does not permit obtaining supplies for the interpretation of maintenance which means maintaining the company's place in the industry by building a new plant; or maintaining a plant's efficiency by putting in new machinery; or maintaining production by obtaining raw materials to be processed.

QUESTION: Just what equipment and supplies can be termed "emergency inventory"?—D. B. C.

ANSWER: P-22 defines emergency inventory as "minimum inventory of material required to provide for repairs to meet an actual or imminent breakdown, from whatever cause, of a producer's property or equipment."

QUESTION: Under definition (e), Subsection 2, of Order P-22, A-10 priority rating is not to be applied unless the material to be delivered cannot be obtained when required without such rating. The oil-equipment supply house might be able to furnish immediately from its stock but shipment to replenish stock might be seriously delayed or indefinite. In this case, should not the supply house insist upon customer's endorsement on customer's order of the prescribed statement that enable supplier to qualify for preference rating on his stock replenishing order?—E. G. B.

ANSWER: The supply house certainly should insist on a P-22 endorsement on every sale of oil-industry equipment, because it is only by showing such that it can replenish its stock; otherwise it will soon be unable to get any scarce materials. The restrictions referred to above applies to the purchaser, not the supplier. The fact that the supplier will not sell without a preference rating is enough to justify the purchaser in applying an A-10 rating; this makes it a "defense order" and the supplier is required by law to fill it. This restriction was imposed to prevent abuse of P-22 by putting in compulsory A-10 orders for brick, lumber, or other materials not ordinarily difficult to get. It does not mean that the oil company has to scour the world unsuccessfully before using the P-22 procedure.

QUESTION: We have heard of some few manufacturers being issued a blanket A-10 priority rating. Could you tell us how to go about getting such a rating?—H. A. W.

ANSWER: Question not clear. No firms in oil industry have been issued blanket ratings as such. Some refiners have obtained project ratings for building 100-octane plants. In a sense, the Defense Supplies Rating Plan and the repair procedure of Order P-22 are blanket orders, though the term "blanket" is usually reserved to a special type of industry-wide order, of which only three or four are outstanding.

Data Support Pennsylvania Producers' Price Protest

Operators gain congressional support in their effort to get prices on crude raised to those prevailing prior to imposition of ceiling. Henderson assures producers that no action will be taken which will prevent production of an adequate supply of Pennsylvania Grade crude.

By HENRY D. RALPH and A. C. MacINTYRE

WASHINGTON, D. C., Sept. 30.—Strong protest against the price ceiling on Pennsylvania Grade crude oils, imposed by Price Administrator Leon Henderson on August 23, was delivered to representatives of the Office of Price Administration by producers from Pennsylvania, New York, West Virginia and Ohio, and by a congressional delegation, at a hearing last Friday.

Sen. Joseph F. Guffey of Pennsylvania, urging that the schedule of maximum prices for Pennsylvania Grade crudes be raised to prices prevailing prior to the imposition of the ceiling, warned that prices must be increased in order to encourage additional production from marginal wells which cannot be operated economically at the present ceiling prices. He pointed out that during the last war it was necessary to raise prices to $6.10 per barrel in order to get sufficient production, and predicted that even if the proposed 23 to 25 cents per barrel raise is granted, a further advance will be necessary before the end of this year.

Sen. Harold H. Burton of Ohio, member of the special Senate investigating committee which recently reported that there is no shortage of petroleum products on the Atlantic seaboard, also urged that the ceiling be raised. Any means of increasing petroleum supplies in the East Coast area should be given special consideration, he declared, because of the situation resulting from the transfer of American flag tankers to the British service.

Sen. Joseph Rosier of West Virginia and Representatives Benjamin Jarrett of Pennsylvania and Robert T. Secrest of Ohio joined in the recommendation that higher prices be permitted in order to increase production.

Henderson Promises Study of Record

Mr. Henderson told the producers that there had been no prejudgment of the case and that he would study the record of the meeting carefully and, if on the basis of the record, an increase is warranted, he will authorize it. No action will be taken by the OPA, he declared, which would prevent the production of an adequate supply of Pennsylvania Grade crude.

Fayette B. Dow, general counsel of the Pennsylvania Grade Crude Oil Association, on behalf of the producers, presented a 76-page brief outlining the needs of the industry and justifying their request for higher prices in order to obtain maximum production of lubricants for the defense effort.

The 76-page brief—with numerous charts, graphs and tables—submitted by Pennsylvania producers at the conference on crude prices covered practically all phases of the industry.

The brief was divided into eight sections, fundamentals of the industry; role in national defense; reserves; production rate increase with price rise; costs; Bradford field experiences; region crude prices and inflation and the conclusion.

In regard to what is considered the main point—what increase in production would follow a 25 per cent increase in the price of crude, the brief declared an increase of from 3,500 to 4,500 bbl. per day can be expected in the first year and from 7,000 to 9,000 bbl. per day in the second year if the price went up 25 cents beyond the present schedule. The following table gives the estimated rates of increase from different areas:

Field—	First year	Second year
Bradford	1,400	3,000
New York	400	800
Other Pennsylvania areas	850-1,250	1,500-2,500
West Virginia and Ohio	850-1,250	1,500-2,500
Total	3,500-4,500	6,800-8,800

The section on costs might be summed up in the following table which sets forth the percentage of crude which can be produced without loss at the quoted price for oil now in effect, which is $2.75 for Bradford grade, top price in the region:

Field—	Prod. per year (bbl.)	At present prices can be produced without loss: Per cent	Bbl.
New York	3,462,120	45	1,557,954
Bradford	14,285,000	76	10,856,600
Kane to Butler	3,713,000	15	690,717
Pennsylvania (composite)	.....	63	.....
West Virginia	3,400,000	4	137,760
Southeast Ohio	1,176,000	24	282,240
Total	26,036,120	52	13,525,271

The following table is a summary of cost exhibits and shows the percentage of Pennsylvania crude which can be produced at or below 1940 costs in the four states:

Per bbl.—	Composite Pa.	New York	West Virginia	Southeastern Ohio
Less than $1.20	....	....	....	....
Less than $1.60	9.87	....	....	....
Less than $2.00	43.04	....	3.88	....
Less than $2.40	53.69	38.00	8.12	49.10
Less than $2.80	64.90	46.00	10.92	51.62
Less than $3.00	79.77	59.00	58.30	55.16
Less than $3.20	90.87	86.50	64.22	100.00
Less than $3.40	94.31	92.30	97.37	....
Less than $3.60	97.86	94.70	98.23	....
Less than $3.80	98.41	96.00	98.63	....
Less than $4.00	99.00	96.70	98.95	....
Less than $4.20	99.06	97.00	98.95	....
Less than $4.40	99.42	97.30	100.00	....

The brief listed the reserves of the region in thousands of barrels as follows:

District—	Total oil	Physically recoverable	Recoverable by present methods
New York	†576,320	.....	‡107,000
Bradford	*874,103	.....	*134,400
Middle District	*2,074,457	*802,862	*263,300
S.W. Pennsylvania	*613,851	*471,610	*135,940
West Virginia	§1,613,220	.....	§232,216
Ohio	†595,000	.....	¶60,000
Total	6,346,951	1,274,472	932,856

*Estimated by the Pennsylvania Geological Survey. †Estimated by a large producing company. ‡Estimated by O. W. Walchli, Wellsville, N. Y., producer. §Estimated by West Virginia Geological Survey. ¶Estimated by A.P.I. committee and multiplied by two to allow for wider application of secondary recovery.

Reserves of 932,856,000 bbl. of recoverable oil is equivalent to 32 years' supply at an average rate of 80,000 bbl. per day production and compares with about 14½ years' supply for the total United States.

In citing the fundamentals of the industry, the brief declared there are 133,420 wells in the region consisting of 3 counties in New York, 18 in western Pennsylvania, 6 in West Virginia, and 17 in southeastern Ohio. Distribution follows: New York, 20,150; Ohio, 13,000; Pennsylvania, 81,790; West Virginia, 18,400. There are 15,000 individual operators in the region and the crude is processed by 26 refineries, 20 of them independently owned and operated. There are about 16,000 persons employed in production and drilling with an annual pay roll of $28,000,000. Refinery employment is 8,000 persons with a pay roll of $15,000,000. Dependent on the industry are employes of pipe lines, manufacturers of supplies, etc. State and federal gasoline taxes and federal lubricating-oil tax derived from region products amount to $115,000 daily or $40,000,000 annually.

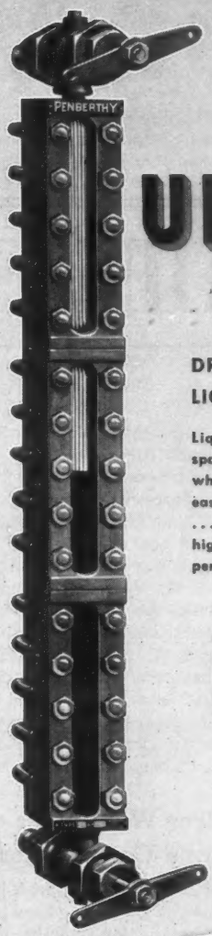
Cites National-Defense Needs

Citing the national-defense demands which will be made on the region, the brief declares:

"The Pennsylvania industry, as a matter of course, will furnish the oil needed to carry out the purpose of the defense effort. In doing so its domestic markets have suffered greatly and will suffer more. The difficulty in recapturing the lost volume or even the normal distributive facilities at the end of the national emergency is obvious.

"In this respect, the Pennsylvania industry is no different from others whose services are required by the Government. However, it is quite apparent that substantial amount of this loss, which is otherwise inevitable, could be averted if a crude supply equal to the maximum refining capacity were made available. It appears to require no argument, therefore, to support the statement that the greater production of Pennsylvania Grade crude is a national need and not a mere economic incident."

The brief held that the price increase which was rescinded by Henderson's office was not inflationary because (*a*) it was made for the economic purpose of stimulating supply within the normal range of price elasticity; (*b*) was in accordance with general commodity price levels which, to date, reflect normal prosperity conditions; (*c*) was in accordance with actual costs which should be the fundamental basis for price; (*d*) was not an increase in price to the consumer but merely an adjustment in the "cost of goods in process" to the refiners.



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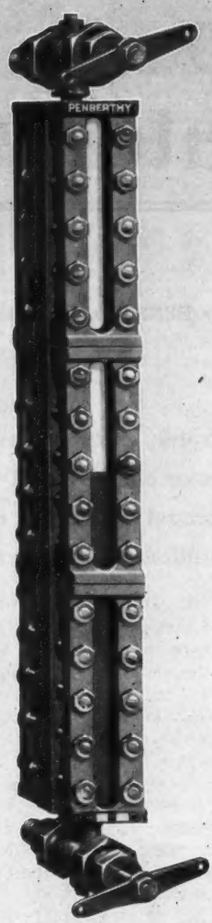

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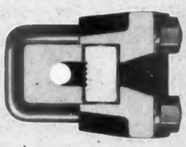
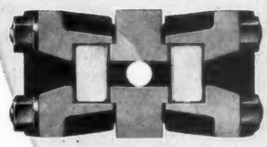
DROP FORGED STEEL LIQUID LEVEL GAGES

Liquid shows black—empty space shows white. Preferred wherever liquid level must be easily and positively visible . . . and when liquids are under high pressure or at high temperature.



PENBERTHY
Transparent
DROP FORGED STEEL LIQUID LEVEL GAGES

Used to observe color and density of liquids under high pressures, and/or temperatures. Construction is exceptionally rugged . . . similar to Reflex types.



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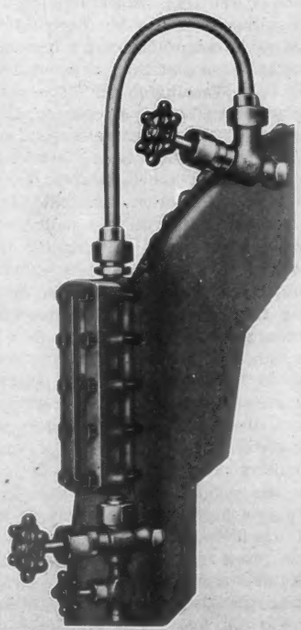
ALL PENBERTHY GAGES CONFORM WITH A. P. I.—A. S. M. E. REQUIREMENTS



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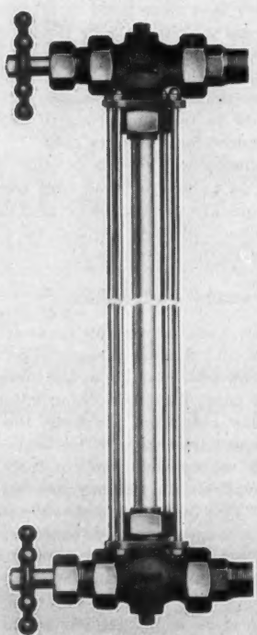
WATER GAGE SET

Water shows black—steam shows white. U-bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler.

PENBERTHY
DROP FORGED STEEL LIQUID LEVEL GAGES

Made of Chromium-molybdenum alloy temperature-resisting steel, extra heavy throughout. Stainless steel trimmed. Tubular glass type gages also available in various other metals suitable for practically all conditions.



PENBERTHY INJECTOR CO.

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PENBERTHY PRODUCTS

Watching WASHINGTON

By HENRY D. RALPH

Telegraphic survey reveals total of 5,192 idle tank cars . . . Seek to improve efficiency of tank barges on inland waterways . . . Ickes may compel California and Illinois to adopt conservation measures . . . California operators submit definite state conservation plan

WASHINGTON, D. C., Sept. 29.—A telegraphic survey of tank-car owners on September 7 showed that there were then only 5,192 surplus tank cars in the country which might be used to haul additional petroleum to the Atlantic Coast region, according to the Office of Petroleum Coordinator. The survey was made by the transportation committee of District 1.

Although the survey was made a few days after J. J. Pelley, president of the Association of American Railroads, told the Senate investigating committee that 20,000 tank cars were available for this traffic, the results of the survey were withheld until this week end.

"Since June 25," Mr. Ickes said, "the Office of the Petroleum Coordinator has urged the oil industry to use tank cars for the hauling of petroleum to the East Coast. A public claim was made for the Association of American Railroads by Mr. John J. Pelley that there were 20,000 idle and available tank cars which could be used for this purpose. No evidence was ever produced by Mr. Pelley or by anyone else as to where these cars, if actually in existence, were located. Oil companies attempting to put tank cars to use met increasing difficulties in obtaining cars.

"Repeated requests were made by this office for information as to where these cars were located, and how quickly they could be made available. No satisfactory information has been produced in answer to the requests.

Inventory Undertaken

"On September 7, therefore, the tank-car subcommittee of the oil-industry transportation committee for District 1 undertook an actual inventory of railroad tank cars. To obtain information regarding how many cars were available, the subcommittee addressed telegrams to the owners of 147,838 tank cars, asking how many of their cars could be made available for hauling petroleum to the East Coast. One hundred and eighty-eight tank-car owners and operators were contacted and all responded. They reported that a net surplus of only 5,192 tank cars were available as of that date.

"The inventory was a factual survey of the physical tank cars available for hauling petroleum to the East Coast.

"This report was forwarded to me last week by W. Alton Jones, president of the Cities Service Oil Co. and chairman of the transportation committee for District 1.

"It had been my intention to submit this report to the special Senate committee investigating the petroleum shortage when and if I was called as a witness. Inasmuch as incomplete versions of this report have now been given public circulation, I now make it public. It speaks for itself."

Mr. Pelley, advised of the results of the tank-car survey, declared:

"I see no point in a controversy about just how many surplus tank cars are available. The figures I gave the Senate committee were furnished by the people who own the tank cars.

"We are now moving to the Atlantic seaboard 75,000 bbl. of oil per day, although the general rate reductions have been in effect only 10 days. Railroads and oil companies are completing arrangements for a further substantial movement to the eastern seaboard. So far as I know, the oil companies who are now moving and propose to move the oil are having no difficulty in getting tank cars."

Discuss Means of Improving Efficiency of Tank Barges

WASHINGTON, D. C., Sept. 29.—Plans for increasing transportation of oil to the Atlantic Coast area through more efficient operation of tank barges on the coastal canals and inland waterways, including the Mississippi and Ohio River systems were discussed at conferences here Friday between owners and operators of barge equipment and representatives of the Petroleum Coordinator's office and the Department of Commerce.

A voluntary fact-finding committee was named by the carriers present to fully explore national-defense traffic on inland rivers and to make a complete inventory of available floating equipment which might have any bearing on the East Coast transportation problem.

The two major topics on the committee's agenda are: (1) the possibility of establishing a favorable balance of traffic by restoring the southbound movement which has seriously declined in recent weeks; and (2) the additional equipment expected to be required for national-defense purposes.

A. W. Frey, general traffic manager of the National Oil Transport Corp., New York, was named chairman of the committee. He stated that while barges are being used to a greater extent than heretofore for the movement of oil and petroleum products, it is the hope of the owners and operators that greater efficiency of operation would result in materially increasing the volume of deliveries.

Other members of the committee are: Andrew P. Calhoun, American Barge Co., representing common carriers; John I. Hay, John I. Hay Co., Chicago, representing contract carriers; M. C. Dupree, Ashland Refining Co., Ashland, Ky., representing independent refineries with barge transporting facilities; R. G. Kimball, Standard Oil Co. of New Jersey, representing major oil companies; H. M. Baskerville, Upper Mississippi Towing Co., Minneapolis, Minn., representing petroleum jobbers; Alex W. Dann, Union Barge Line Corp., Inc., Pittsburgh, Pa., representing common carriers; R. G. Sauer, Standard Oil Co. of Ohio, Cleveland, Ohio, representing major oil companies, and A. L. Christy, Pure Oil Co. and Pure Oil Steamship Co., Chicago, member at large.

DeGolyer Will Confer on California Conservation

WASHINGTON, D. C., Sept. 30.—Petroleum Coordinator Harold L. Ickes today notified the District 5 production committee that E. DeGolyer, director of the OPC conservation division, will arrive in Los Angeles, Calif., later this week to confer on a California conservation plan.

The coordinator acted after receiving word from the production committee that it has completed a conservation plan and that members were ready to bring it to Washington for discussion.

Long anticipated, such a move appeared imminent when Mr. Ickes released the text of a letter to the production committee of District 5 (Pacific Coast) asking that a detailed plan be prepared.

In releasing the letter, Mr. Ickes deleted the date, in accordance with the policy of the coordinator's office in maintaining the utmost secrecy and mystery about its current plans and activities, but since it was written in response to action initiated by the committee on July 20 the presumption is that the letter is a couple of months old. It is also a fair assumption, in the light of Mr. Ickes' public-relations policy, that he did not release the letter or authorize the committee to discuss it, until after the committee had completed a formal plan and it was too late for producers not represented on the committee to offer any suggestions or protests.

Whatever conservation plan may be applied to District 5 will not, of course, apply to Illinois. But in a press release accompanying the letter appears this statement:

"Coordinator Ickes recalled that California and Illinois are the two major oil states which do not accomplish conservation by statute, and observed that production in those states had reached a point where positive, immediate steps toward conservation are necessary in the interest of national defense."

This interpolation by Mr. Ickes' publicity staff may be taken as an indication that a similar request will be—or perhaps already has been—made

to the production committee District 2, which includes Illinois.

Since the Office of Petroleum Coordinator has no more statutory authority over oil production than Mr. Ickes had as just plain secretary of the interior, the question may be raised as to just how such a conservation plan might be enforced. The answer is given, between the lines, in the coordinator's letter. He refers in passing to getting formal approval of the plan from the Department of Justice, but, more importantly, he speaks of making "the most effective use of materials and supplies that will be available under the priority system."

Since the Priorities Division of OPM has now, unofficially, delegated to the OPC initial authority to pass on applications for priorities to obtain essential supplies, the OPC has a very practical club for enforcing adherence to this or any other plan it "recommends" to the oil industry.

The coordinator's letter was in answer to an inquiry from the District 5 production committee asking for his blessing on continuance of the voluntary conservation plan of California producers. Mr. Ickes wrote back, in effect, that the old plan is not enough under present conditions, and a new one must be prepared which conforms to the various objectives set forth in the president's letter of May 28 appointing Mr. Ickes as petroleum coordinator.

Committee Submits Program For California Conservation

By L. P. STOCKMAN

LOS ANGELES, Calif., Sept. 29.—In accordance with a recommendation of Oil Coordinator Ickes, the production committee for District 5 has submitted a definite plan for California oil conservation. No announcement has been made by the committee as its members feel that final action must be taken by Secretary Ickes with respect to approval or rejection of the recommendations submitted. It is quite likely, however, that the new plan will conform more or less with the letter received from the secretary. Secretary Ickes' letter to the committee in part reads: "Your committee no doubt recognizes that the petroleum coordinator is not empowered to approve or recommend proration by voluntary agreement as a purely abstract matter. Without in any way reflecting on past efforts of California oil producers to effectuate conservation by whatever systems of voluntary proration as have been followed, the petroleum coordinator for national defense must necessarily seek to coordinate the activities and functions of the American petroleum industry along the lines and within the boundaries set forth in the president's letter of May 28. Although we had hoped it might be otherwise, our observations lead us to believe that conditions have reached such a stage that your committee should give this subject your immediate and undivided attention. Only through the formulation of a definite plan of action for the producing division of the California petroleum industry can your committee accomplish the objectives defined by the president. Moreover, the formulation of such a definite plan is necessary to conform with the procedure agreed upon with the Department of Justice by this office and other defense agencies.

"Some of the problems to be covered and those which require immediate action are: the proper development, production, and utilization of those reserves of crude oils and natural gas that are of strategic importance both in quality and location; the most economical use of the raw materials, and efficiency of production and distribution; and the elimination of the drilling of unnecessary wells in proven fields. In attempting to realize the objectives specified in the president's letter, it would seem that any program proposed should include three major subjects, namely: (1) A statement of the purpose of the plan and the principles upon which it is founded; (2) a detailed and definite plan for accomplishing the defined purpose in conformity with the basic principles; (3) a scheme of organization which will indicate the function to be performed by such existing or other groups as your committee may deem necessary. Your committee should formulate and propose some definite plans for: (1) Encouraging and fostering exploration for and discovery of new petroleum and natural-gas reserves at a rate not less than that by which known reserves are annually depleted; (2) the further development of all petroleum and natural-gas reserves in such an orderly and efficient manner as to result in the most effective and economical use of raw materials, supplies, and equipment; (3) the future development and production of the petroleum and natural reservoir energy or of the energy which may be artificially restored or augmented; (4) obtaining the maximum economic recovery of the limited petroleum and natural-gas reserves; (5) efficiently supplying reasonable special demands for certain grades or kinds of petroleum at particular places; (6) accomplishing the foregoing objectives without impairing or jeopardizing the present defense requirements or the defense and civilian needs of the future."

The above indicates the probable line that the production committee of District 5 followed in its efforts to submit a workable plan that will meet with approval of the secretary. Special attention is directed to the reference to "supplying special demands for certain grades or kinds of petroleum" as this might indicate that the committee might recommend reduced output of light refinable grades of crude and an increase in the heavier grades to meet the demand for fuel oil.

Recommend Industry Be Accorded Better Priorities Position

WASHINGTON, D. C., Sept. 29.—Recommendation that the petroleum industry "be placed in its proper position under the priorities system" as quickly as possible in order that the various branches of the industry may obtain essential supplies to meet the enormously increased demands resulting from the war, was presented to Donald M. Nelson, director of priorities, late last week in a letter signed by the general chairman of the five regional committees.

Explaining the importance of petroleum products to the Army, Navy, the Air Forces and to all industries serving these forces, the letter stated that as increased demands for petroleum become known, it will be necessary for the industry, through manufacturers, suppliers, and service agencies to obtain the steel and other products which are essential in not only maintaining its present production, transportation, refining and marketing facilities, but to increase such facilities as may be required.

"This means that not only must the reserves of the nation be maintained, but they must be increased by an aggressive program of exploration, wildcatting, and development," the letter warned.

"Obtaining such equipment and supplies to enable the petroleum industry to continue to produce even at present rates presents an emergency the gravity of which cannot be exaggerated," it continued.

"To meet this situation and to continue to expand the reserves for future requirements will be impossible unless the petroleum industry is furnished with adequate material, equipment, supplies and other essential services."

Raigorodsky Named Assistant Director of Natural-Gas Operation

Paul Raigorodsky, natural-gasoline production engineer of international reputation, has accepted the office of assistant director of production in the natural-gas division of the federal petroleum coordinator in Washington, D. C. Friends of Mr. Raigorodsky interpret this decision as a sacrifice of major economic importance for the moment because he is vice president of Petroleum Engineering, Inc., vice president of Aldon Gasoline Co., and vice president of Glen Rose Gasoline Co. Mr. Raigorodsky has been in Washington for the greater share of the past week.

PAUL RAIGORODSKY

SPAB Will Get Additional Pipe-Line Data October 7

WASHINGTON, D. C., Sept. 30.—The Supply Priorities Allocation Board declined to act today on another request from Petroleum Coordinator Ickes for steel to construct the national-defense pipe line. The Office of Petroleum Coordinator requested another audience today with SPAB for consideration of the defense crude-oil line running 1,586 miles from Texas through Illinois and on to New York.

SPAB declined to consider the renewed request until it has full information regarding materials needed for the line, pumping stations and all auxiliary and supplemental steel and other metals. OPC expects to assemble all information requested by SPAB in time for the latter group's meeting October 7.

Two Sections of Journal A.P.I. Special Assured

Reservations already made for the special train which The Oil and Gas Journal is sponsoring to the American Petroleum Institute meeting in San Francisco, Calif., now total nearly 200. This assures that two sections of the train will be necessary, as it can be anticipated that a minimum of 200 convention visitors will choose this train for their trek to the West Coast. One of these sections will start from Chicago, and the other from Tulsa. The two sections will meet in Newton, Kans., and will continue westward to San Francisco as two additional sections of the Santa Fe's famous Super Chief, deluxe all-Pullman streamlined train.

The Chicago section will depart from the Windy City at 11:45 a.m., October 31, and the Tulsa section will leave the Oil Capital at 4 p.m., October 31. The schedule will be as swift as the regular run of the Super Chief, which is the fastest of the continental runs.

The two trains will feature the finest available equipment. Every type of Pullman accommodations is offered, ranging from double bedrooms to lower berth. And of course, lounge car, barber shop, and dining car. All coaches will be of lightweight stainless steel.

Reservations are still being received, and it is urged that those who have not yet sent in reservations, do so at once, to avoid disappointment. Reservations may be made through the Tulsa office of either The Oil and Gas Journal or the Santa Fe Railway.

A.P.I. Men Invited to Attend C.N.G.A. Technical Meeting

Keyed to national defense and presentation of papers dealing with subjects pertinent to the industry, the sixteenth annual fall all-day technical meeting of California Natural Gasoline Association will be held in the Ambassador Hotel, Los Angeles, on Friday, October 31, 1941, according to the joint announcement of W. C. Dayhuff, C.N.G.A. president, and M. W. Kibre, chairman of the fall meeting committee in charge of the event.

During recent years, the C.N.G.A. fall meeting has attracted increasing interest in the Mid-Continent and East. To make it convenient for refinery and natural-gasoline men from those districts to attend this year's event, the October 31 date was selected as it comes just ahead of the A.P.I. convention, scheduled to convene in San Francisco on November 3. In this connection, President Dayhuff, on behalf of the association's directors, officers and members, issued a special invitation to all attending the A.P.I. convention to stop over in Los Angeles and participate in the C.N.G.A. event. Mr. Dayhuff pointed out that the Mid-Continent and eastern men coming to California for the A.P.I. meeting can have their railroad tickets written to San Francisco via Los Angeles, with stopover privilege, without additional rail fare.

One of the feature papers will be "The Importance of Natural Gasoline in National Defense" which will be delivered by a representative of the petroleum coordinator's office. Other papers planned for the meeting include "Partial Volume and Its Significance," by Dr. B. H. Sage and Dr. William N. Lacey, California Institute of Technology; "Human Engineering in the Petroleum Industry," by George P. Bunn and Wallace Williams, Phillips Petroleum Co.; "Studies in Standardization of Gaging Methods for the Shipping of Liquid Petroleum Products by Vehicular Units," by W. B. Parks, Norwalk Co.; "Recycling and Pressure Maintenance," by P. C. Dixon, Foran, Boatright & Dixon; "Investigation of Standard Methods for Compressor Horsepower Calculations," by Tom Dunlap, Standard Oil Co. of California, and "Polyform Process," by E. R. Smoley, Lummus Co.

October Gasoline Curtailment Based on 3-Month Average

WASHINGTON, D. C., Sept. 30.—October consumption-curtailment order for gasoline sales in District 1 (Atlantic Coast) was issued late tonight by Donald M. Nelson, director of priorities.

Curtailment will be based on 90 per cent of average monthly deliveries to dealers for the months of May, June, and July, 1941. Total gasoline to be delivered by all primary suppliers is divided among the various Atlantic Coast states taking into account the normal shift in normal demands between these states based on the May-to-July average in order to reflect more exactly the relative sales positions of the various primary suppliers.

Deliveries to all individual accounts within each state is allocated on the basis of a uniform percentage of the quantity received in the corresponding month last year in order to allow for seasonal fluctuations between areas and accounts within each state.

Exceptions will be allowed for minimum bulk deliveries necessary for essential transportation media, defense projects and agricultural activities, and preferences allowed at service stations for operation of vehicles in the interest of public health and safety. Adjustments will also be allowed individual accounts in exceptional circumstances such as abnormal or subnormal deliveries during October 1940 or unusual expansion or contraction of business since. Individual resellers, service stations and consumers will be protected with respect to their sources of supply, including independent spot buyers whose receipts are not regularly received from any particular supplier. Sales, purchases, loans or exchanges will be made between primary suppliers to balance deliveries, and all suppliers will be allowed to deliver gasoline to governmental agencies without deducting such deliveries from their allocations.

The order prohibits the movement of any motor fuel from within the area of shortage to any point in the United States outside the shortage area.

DEATHS

THOMAS BLACK, 77, of Franklin, Pa., former vice president of Standard Oil Co. of Kansas, died September 26 of cerebral hemorrhage while walking along a highway near Merriam, Kans.

CARROLL H. BROWN, 53, oil man of Lytle, Tex., died September 21 in a Temple, Tex., hospital. He leaves his wife, a son and two daughters.

J. C. BRIXEY, 57, former employe of the Carter Oil Co., Tulsa, died last week of a paralytic stroke and cerebral hemorrhage. The widow, two sons and a daughter survive.

JOE J. DECKER, 41, owner of the Texas Butane Gas Co., died in a Wichita Falls, Tex., hospital from injuries suffered when he was struck by an automobile on the highway near Jolly, Tex. He was changing a tire on his truck when he was struck. The widow and three sons survive.

DR. S. G. KENNEDY, capitalist, rancher and oil man, died at his home in Tulsa last Friday. He had been in failing health for 6 years. Dr. Kennedy settled in Tulsa in 1911, and practiced medicine for 25 years, then entered the oil business to amass a fortune of several million dollars in the short space of 4 years. His widow and seven children survive.

L. A. HUDSON, 72, pioneer employe of Mid-Continent Petroleum Corp., Tulsa, died late last week at a Tulsa hospital after an illness of 2 months. He is survived by a daughter.

LOUIS LeBARON, 73, died in a Tulsa hospital last week. He was one of two Tulsa drillers who helped bring in the Cerroazul pool well in Mexico.

HERBERT BALL, 65, pioneer oil operator in the McKittrick, Calif., district, died last week following a long illness, in a San Francisco, Calif., hospital. His widow and a son survive.

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Norwegian Tankers Assigned To Serve United Kingdom

NEW YORK, Sept. 30.—Twenty-two Norwegian tankers now under charter to American oil companies will soon go into British service, Norwegian shipping authorities in New York have disclosed. These vessels, now in Latin-American service, will be transferred as soon as they complete their current runs.

Transfer of these vessels to the service of the United Kingdom will raise the total tonnage of tankers withdrawn from Western Hemisphere routes to approximately 1,000,000 tons. Previously withdrawn were 80 tankers representing about 800,000 tons which were taken from United States coastwise service for the British shuttle service.

It is reported that these vessels are not scheduled for British service "for the duration" but will be released after the completion of one or two trips and returned to the service from which they are being taken. The problem of supplying Russia with aviation motor fuel and increased tanker losses are believed to have been partially responsible for the latest transfer. Over the past week end Germany claimed the sinking of six and Italy two supplying the United Kingdom.

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THE MARKETS*

CRUDE OIL: All crude prices are firm and premiums in various forms are growing more numerous in some of the areas nearest the points of shortage. An advance of 7 cents per barrel was posted September 16 on Pickens field, Mississippi, crude, making the new posting $1 per barrel. Heavier shipments by railroads from Illinois fields and from pipe lines terminating there and in Ohio have stimulated crude demand in the Middle West.

REFINERY PRODUCTS: Gulf Coast refiners worked their gasoline prices to a slightly higher level during the week. Other refinery markets, east of California, were firm to stronger but mostly unchanged from previous levels. Demand is strong in practically all sections for gasoline, distillate fuel oil and lubricating stocks.

TANK WAGON AND POSTED DEALER: Spotty tank-wagon markets in some sections of the Middle West are reported. East Coast, Southeast, Southwest and Rocky Mountain markets are unchanged and firm at present levels.

FINANCIAL: Oil securities rallied slightly this week after recovering from pressure imposed on the general list a week ago on the proposal to limit profits made by Secretary Morgenthau.

*Detailed information in market section.

Refinery Expansion

Frontier Completes Cracking Unit at Cheyenne Refinery

DENVER, Colo.—Frontier Refining Co. of Denver has completed installation of a new cracking unit at its refinery at Cheyenne, Wyo., which is capable of processing 750 bbl. daily. The crude capacity of Frontier's refinery is 1,500 bbl. daily. Company offices soon will be moved from Denver to Cheyenne.

M. H. Robineau is president and R. R. Rankin is the general superintendent. E. W. Willard, a member of the Denver banking firm of Boettcher & Co., has been added to the board.

Two Grades of Gasoline Specified for Canadians

Grading of gasoline in Canada, discussed since start of the European war, has been instituted, effective October 1, by order of the Canadian Oil Controller. Two grades of motor fuel only will be available for motor vehicles after the effective date of the order which is No. 008.

The top grade of motor fuel will have an octane rating of 75 to 78 determined by A.S.T.M. method D-357-40 and the other will range from 66 to 70 octane on the same standard. Variation in the volatility to compensate for summer and winter operation are provided in the specifications.

Details of the specifications instituted by the Canadian oil controller are given below:

SCHEDULE A

(To the Order of the Oil Controller No. 008)

Specifications for Graded Motor Fuel

GRADE 1

	May 15-Sept. 15 (summer)	Sept. 16-May 14 (winter)
Distillation:		
Not less than 10% at	155° F.	140° F.
Not less than 50% at	260° F.	257° F.
Not less than 90% at	370° F.	370° F.

A.S.T.M. Method D-86-40

Octane No. (A.S.T.M. Method D-357-40)—75 to 78

GRADE 2

	May 15-Sept. 15 (summer)	Sept. 16-May 14 (winter)
Distillation:		
Not less than 10% at	155° F.	140° F.
Not less than 50% at	260° F.	257° F.
Not less than 90% at	370° F.	370° F.

A.S.T.M. Method D-86-40

Octane No. (A.S.T.M. Method D-357-40)—66 to 70

Specifications Common to Grades 1 and 2

Water: None present.

Sediment: None present.

Sulfur (A.S.T.M. Method D-90-34T): Winter, Sept. 16-May 14, not more than 0.1 per cent; summer, May 15-September 15, not more than 0.15 per cent.

Corrosion: Grade motor fuel shall pass the test for corrosion specified by A.S.T.M. D-130-30.

Freezing point: Winter, Sept. 16-May 14, 76° F.

Vapor pressure: Method (A.S.T.M. D-323-40T): Summer, May 15-Sept. 15, 10 lb. per sq. in.; winter, Sept. 16-May 14, 13 lb. per sq. in.

Exception: A vapor pressure of 1 lb. greater shall be permissible at a refinery or at delivery from railway tank cars.

Gum: The gum content shall not exceed 10 mg. per 100 c.c. The determination shall be made by A.S.T.M. procedure D381-36 unless top cylinder lubricant is stated to be present, in which case C.G.P.S.C. procedure 3-GP-9 shall be followed.

Sonken-Galamba Will Expand Capacity of Kansas Refinery

GREAT BEND, Kans.—Capacity of Falcon Refining Co.'s plant here will be increased from the present rating of 2,000 bbl. daily to 3,500 bbl. by a construction program announced last week. The plant was recently purchased by Sonken-Galamba Supply Co. of Kansas City, Kans., and Tulsa.

W. C. Berry, Jr., representative of the new owners, announced that the expansion program would involve expenditure of $435,000. Improvement and expansion of the refinery will cost $350,000 and another appropriation of $85,000 has been made for construction of a pipe line from the plant to nearby producing properties.

Sunray and White Eagle Plan Aviation Gasoline Units

Two Mid-Continent refineries last week announced plans for expansion of their plants to produce high-test aviation gasoline.

Sunray Oil Corp. said it would build an extension to its catalytic polymerization unit at Allen, Okla., which will double the present production of 90-octane gasoline. Orders have been placed for all equipment and application for priority has been made. It is expected that the new plant will be in operation at the beginning of 1942.

At Augusta, Kans., officials of the White Eagle Division, Socony-Vacuum Oil Co., Inc., were reported preparing to let contracts for a refining unit. Capacity of the unit for manufacture of 100-octane gasoline will be determined later. The new unit would use the alkylation process and would reportedly cost in the neighborhood of $1,500,000.

Arrow Arranging Refining Capacity of 7,000 Bbl. Daily

Arrow Petroleum Co., Forest Park, Ill., will have refining capacity of 7,000 bbl. daily when construction is completed on the new plant the company is building in the Chicago area and expansion plans are consummated on the old Egyptian Producing & Refining Co. plant at Centralia, Ill., which was recently acquired by purchase.

The new refinery at Chicago will have capacity of 4,000 bbl. per day and will include a cracking unit. Capacity of the Centralia refinery, which was a 2,000-bbl. skimming unit, will be increased to 3,000 bbl.

Natural Gasoline

Sunflower Ready to Open Adsorption Plant at Salem

CENTRALIA, Ill.—Sunflower Gasoline Corp. expects to run the first gas to its new 20,000,000-cu. ft. adsorption plant in the Salem oil field this week. Except for 14 engines formerly used in an Oklahoma City plant, all equipment is new. It was built at a cost of $600,000 and has a daily manufacturing capacity of 125,000 gal. of natural gasoline, butane and propane. Construction plans provided for ready expansion.

The new plant is the second in the Salem area to be operated by the Sunflower company. The first has been in operation since early in 1940. Both plants are Tulsa type and have a combined capacity of 160,000 gal. of products daily.

The two plants will be served by a line which Denton & Densmoor recently bought from the Canyon Pipe Line Co., extending from Sunflower No. 2 plant to the Advance Refining Co. refinery at Centralia. Some 28,000,000 cu. ft. of residue gas from the two plants will be available for the Advance and Egyptian refineries at Centralia and for other industrial purchasers in Marion County.

Jesse C. Terry is superintendent of plant No. 1 and J. O. Huffman is superintendent of the new plant.

Natural Gas News

Oklahoma Town Faced With Loss Of Gas Service to Drill Own Well

Town leaders of Skiatook, Okla., faced with a loss of gas service formerly supplied by the Union Gas Co., raised $2,000 to drill a gas well on a city-owned lot, let a contract with the Colpitt Brothers Drilling Co. of Collinsville to start the well this week and then rushed appeals to the state Corporation Commission to order the gas company to continue service until an adequate supply can be obtained.

The commission permitted the gas company to stop service in Skiatook and Sperry September 10 because its supply of gas in the Osage fields was depleted, but granted another hearing October 2 on petition by citizens of the area who asked that the abandonment permit be postponed.

Studies of Natural-Gas Problems Undertaken by Texas University

AUSTIN, Tex.—Researchers at the University of Texas have undertaken a study of the natural-gas industry in an attempt to solve the problem of wastage, now estimated at $20,000,000 a year. Object of the study, according to Dr. E. P. Schoch, head of the university's bureau of industrial chemistry, is to find new uses for the gas now allowed to escape into the air from wells.

Included in the study will be a survey of location of reserves, statistics on production, employment, economic utilization and development of new byproducts.

Pacific Gas & Electric Appeals SEC Holding Company Order

An order of the Securities and Exchange Commission, issued September 15, last, declaring the Pacific Gas & Electric Co. to be a subsidiary of the North American Co. has been challenged by court proceedings instituted last week by the gas company in U. S. Circuit Court of Appeals in California.

Utility circles have expressed considerable interest in the situation because of recent moves by the SEC to extend regulatory control over wholly intrastate utilities with less than a majority of capital or voting stock resting in holding-company setups. The commission found that North American owns 17.7 per cent of the voting stock in the California utility, and therefore exercised "controlling influence" making the company subject to the general requirement of regulation as a subsidiary of a registered holding company.

The issue was said to have assumed added importance because both the California Railroad Commission and the SEC examiner, 5 years ago, stated they had no evidence that North American had the power to control Pacific Gas.

PROGRAMS AND MEETINGS

Distinguished Speakers Arranged For Texas Mid-Continent Meeting

Celebrating the fortieth anniversary of the discovery of Spindletop, the Texas Mid-Continent Oil and Gas Association will hold its twenty-second annual convention October 9-11 at Beaumont.

Features of the anniversary observance will be the dedication of the Lucas gusher monument on the site of the Spindletop discovery, an old-timers' reunion of oil notables who got their starts at Beaumont in 1901, a wildcat jamboree for the oil men and their wives, and the spudding of an anniversary test in the heart of downtown Beaumont with a crew of famous Spindletoppers, using a duplicate of the equipment which brought in the Lucas well.

Speakers at the meeting will include Ralph K. Davies, deputy petroleum coordinator; E. DeGolyer, national director of conservation; Lord Marley, deputy speaker of the British House of Lords; Prof. George C. Hester of Southwestern

E. DE GOLYER

RALPH K. DAVIES

University, authority on state and local government and taxation; Jerry Sadler, of the Texas Railroad Commission, and George A. Hill, Jr., vice president of the American Petroleum Institute and chairman of its Production Division. Distinguished service awards will be presented two outstanding Texas oil men, with L. P. Garrett, of Houston, making the presentation to the operator chosen, and George Sawtelle to the company official.

Mr. Davies will speak Thursday afternoon, October 9, on the priorities situation, drilling and production coordination and other problems now vitally affecting oil operators. Oil men from all over the Mid-Continent and Gulf Coast areas are expected at Beaumont for the address and other features of the meeting. Advance hotel reservations are more than double those for any previous convention in the association's history.

Lord Marley, who is an authority on the East as well as on Europe, will talk on "Oil and Victory: Some Economic Aspects of the War and the Importance of the Oil Factor," at the Friday morning session. Mr. DeGolyer and Mr. Hill will make the principal addresses at the dedication of the Lucas gusher monument Thursday afternoon, with the ceremonies to be broadcast. Professor Hester will address the Thursday afternoon business session on fitting state and local governments to present-day needs, and Commissioner Sadler will speak at the Thursday morning meeting.

An elaborate entertainment program has been arranged by the Beaumont convention committee headed by J. Cooke Wilson and the special subcommittee with W. W. Leach as chairman.

The shack town which mushroomed up at Spindletop in 1901 will be recreated as the setting for the wildcat jamboree Friday night, with the old stores, tool works, supply houses, bars, etc., simulated life-size. On their signs will be many names now famous in the oil industry which were first seen and heard at Spindletop. Swinging doors will swing again, and "Free Lunch" signs will reappear, while entertainers will include not only singing waiters and dancing bar-maids but also a complete floor show. The annual oil men's golf tournament will be played Friday afternoon, October 10, at Beaumont Country Club with 200 operators representing 20 leading oil centers participating. Prizes will be awarded that night at the jamboree. A reception Friday afternoon will furnish entertainment for the oil men who do not play golf, and their wives, while a boat trip through the coastal industrial section will be offered Saturday morning, October 11.

Arrangements for a special train for oil men to leave Dallas-Fort Worth the night of Wednesday, October 8, and return Friday night after the jamboree in time for the Oklahoma-Texas University football game at Dallas Saturday are being made by George C. Gibbons, executive vice president, with offices in Dallas. E. L. Smith of Dallas is president of the association, while regional vice presidents are: H. R. Cullen, of Houston, Gulf Coast; B. G. Byars, of Tyler, East Texas; J. L. Collins, of Corsicana, East Central Texas; Charles J. Tucker, of Wichita Falls, North Texas; A. E. Herrmann, of Amarillo, Panhandle; Paul C. Teas, of Lubbock, West Texas; W. J. Rhodes, of Breckenridge, West Central Texas; Al Buchanan, of San Antonio, Southwest Texas, and Eugene McElvaney, of Dallas, treasurer.

A special meeting of the Houston Geological Society and Gulf Coast chapter of the American Institute of Mining and Metallurgical Engineers will be held at Beaumont Thursday night, October 9, with a program on Spindletop's geology.

CALENDAR

October

WEST VIRGINIA OIL AND NATURAL GAS ASSOCIATION, annual convention, Clarksburg, W. Va., October 2-3.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Allis Hotel, Wichita, Kans., October 3.

NATIONAL FOREIGN TRADE CONVENTION, twenty-eighth meeting, Hotel Pennsylvania, New York City, October 6-8.

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 6-9.

AMERICAN PETROLEUM INSTITUTE, East Texas chapter, Kilgore, Tex., October 7.

AMERICAN SOCIETY OF PHOTOGRAMMETRY, midyear convention, Tulsa, October 7-9.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, twenty-second annual convention, Beaumont, Tex., October 9-11.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, fall convention and old-timers' gathering, Hotel Severin, Indianapolis, Ind., October 14-15.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Pacific section, Los Angeles, Calif., October 16-17.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Dallas, Tex., October 16-18.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Washington-Youree Hotel, Shreveport, La., October 17.

NATIONAL STRIPPER WELL ASSOCIATION, Tulsa, October 20.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, twelfth annual meeting, Tulsa, October 20-21-22.

SOCIETY OF AUTOMOTIVE ENGINEERS, national fuels and lubricants meeting, Mayo Hotel, Tulsa, October 23-24.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Southern California section, Los Angeles, Calif., October 29-30.

SOCIETY OF AUTOMOTIVE ENGINEERS, national aircraft production meeting, Biltmore Hotel, Los Angeles, Calif., October 30-November 1.

CALIFORNIA NATURAL GASOLINE ASSOCIATION, Los Angeles, Calif., October 31.

Oil Compact Commission Called to Meet October 16

OKLAHOMA CITY, Okla., Sept. 30.—Governor Phillips, chairman of the Interstate Oil Compact Commission, has called the next quarterly session of the commission to meet in the Blackstone Hotel, Fort Worth, Tex., at 10 a.m. October 16.

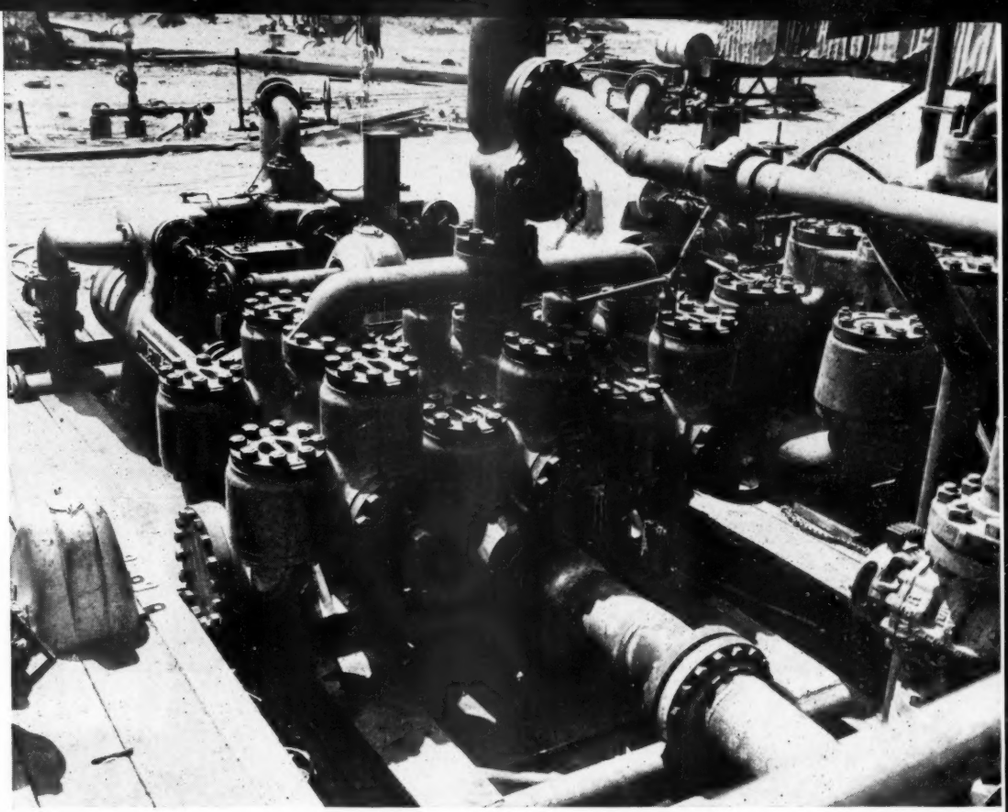
Members of the commission and its legal, engineering and regulatory-practices committees, are expected to arrive in Fort Worth October 15 and hold their committee meetings. The committee on compact activity and the bylaws committee will make their reports October 16. The legal, engineering and regulatory-practices committees will have a joint meeting October 15 and work out plans for a consolidated report to be published in one volume.

The formal program for the meeting has not yet been completed. Petroleum Coordinator Ickes has been invited to attend and address the meeting or to send representatives. It is expected that Robert E. Allen, director of production, OPC, will attend and address the meeting on "Steel Priorities." E. DeGolyer, director of conservation in OPC, is expected to attend and speak on "Conservation." A. G. White of the U. S. Bureau of Mines has been invited to discuss the current supply and bureau forecasts of demand.

The oil and gas committee of the Fort Worth Chamber of Commerce will be in charge of arrangements for the entertainment of visiting delegates and officials. The entertainment feature will be a dinner at the Riverside Country Club at which Gov. Coke Stevenson will preside.

East Texas A.P.I. Meeting Will Hold Novel Program

The East Texas chapter of the American Petroleum Institute will meet in the Kilgore High School auditorium, Tuesday, October 7, at 8 p.m. The topic of discussion will be the salt-water problem in East Texas. The program will take the form of an "information, please" round-table discussion, with E. B. Miller, Jr., as chairman. Several prominent oil men will initiate discussion and answer questions from the audience. A lively entertainment program will top off the meeting. A dinner honoring the speakers will begin at 6:15 p.m., at the Kilgore Hotel. Speaker at the dinner will be E. O. Buck, assistant coordinator for District 3. His topic will be "How the Oil Producer Fits In With the Defense Setup."



Larger mud pumps are required to get the fluid capacity needed in deep drilling but they have already approached the practical limit in stroke and bore. The accompanying picture shows the most recent step in the march toward greater-capacity mud pumps, a triplex steam pump which is being used in California. *Story on Page 50*

ENGINEERING & OPERATION

In This Section

OCTOBER 2, 1941

PRESSURE-MAINTENANCE PROJECT CONSERVES RESERVOIR ENERGY
By Neil Williams ..... Page 30
Bottom-hole pressure in the Driscoll Ranch pool of Duval County, Texas, has been stabilized by the injection of 2,500,000,000 cu. ft. of gas in the past year and a half. Prolonged flowing life of the wells is insured by the project.

APPLYING FORMATION LOGGING THROUGH MUD ANALYSIS
By Harry F. Simons ..... Page 33
Importance of formation logging has steadily increased and among the new tools available to the operator is mud analysis. Applications of the method, which was introduced 18 months ago, are increasing.

USE OF STRESS-RUPTURE DATA IN INSPECTING CRACKING-STILL TUBES
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Normal laboratory procedures do not reveal all of the facts concerning the high-pressure behavior of steels and stress-rupture tests are necessary to obtain this information. This article is the first in a series dealing with refining metallurgy.

NEW REFINERY PROCESSES IN RELATION TO NATIONAL DEFENSE
By T. B. Leech ..... Page 40
Two vapor-phase refining processes have been introduced in the past several years and are of great interest because of the present international situation.

CATHODIC PROTECTION OF MONTANA POWER COMPANY'S PIPE LINES
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Pressure-maintenance plant, Driscoll field, Duval County, Southwest Texas, showing radiator-type coolers at right

Pressure-Maintenance Project Conserves Reservoir Energy

By NEIL WILLIAMS

DURING the year and a half in which Continental Oil Co.'s pressure-maintenance project in the Driscoll Ranch pool, Duval County, Southwest Texas, has been in operation, approximately 2,500,000,000 cu. ft. of gas has been returned to the producing horizon. In addition to the conservation of this gas, bottom-hole pressure of the sand has been stabilized, insuring prolonged flowing life for the producing wells and greater ultimate recoveries than otherwise could be expected. Nearly 1,000,000 bbl. of oil has been withdrawn from the reservoir since pressure maintenance was started.

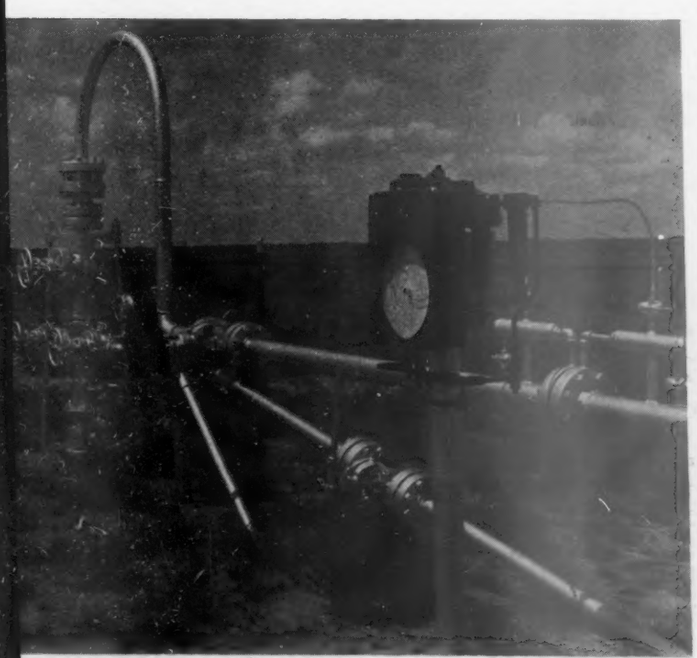
Involved in the project is the upper first Government Wells sand, the field's principal producing horizon, which, in its oil phase, lies at a depth around 3,400 ft. This sand has a comparatively large, pronounced gas cap, and, by the return of all produced gas to this horizon, it is hoped to preserve the pressure as nearly as possible to its original value. First bottom-hole-pressure readings were made in 1937, at which time, with development of the sand in its early stages, the pressure was approximately 1,300 lb. Before the pressure-maintenance operations were started in March 1940 the reservoir pressure had declined to about 1,200 lb., but since then it has been held practically constant.

Original Compressor Equipment

Originally, the compressor plant for returning gas to the sand consisted of two 400-hp. gas-engine-driven compressors. Since then, the addition of a 600-hp. compressor has been made, making a total of 1,400 hp., and increasing the capacity of the plant to 9,000,000 cu. ft. of gas daily. Further enlargement of the plant is anticipated with continued development of the field.

The structure is indicated to be a domal-shaped anticline with sands overlying and extending down the sides in more or less symmetrical contours. The oil-productive area of the upper first Government Wells sand is circling the structure in a comparatively narrow strip, about three to four 700-ft. locations wide, roughly skirting the outer productive limits of the shallower sands.

Sand thickness averages 50 ft. Gas-oil contact has been found to be at a subsea depth of 2,744 ft. with the water level at a subsea depth of approximately 2,800 ft., leaving an oil column of approximately 56 ft. Through preservation of the gas cap and controlled withdrawals it is hoped to maintain a uniform rise in the water level to obtain the most effective utilization of the water head in efficient recovery of the oil. Surface elevation of the field ranges from 550 to 600 ft.



One of two injection wells for Continental Oil Co.'s pressure-maintenance operations in the Driscoll field

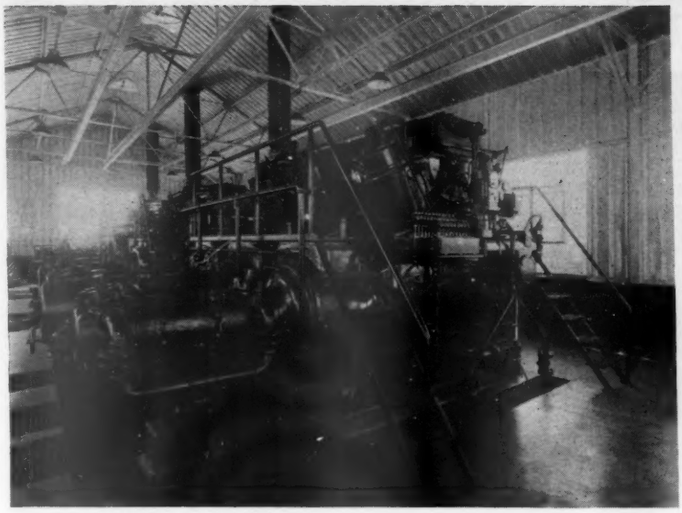
To date 47 oil wells have been completed in the upper first Government Wells sand. One rig is being kept running in a steady, systematic development program. There are 15 producing wells in the various other sands. At present only the upper first Government Wells sand is being developed, most of the shallower wells having been drilled prior to the opening of this sand. So far the development has extended only around the south half of the structure. The spacing program, based on locations 707 ft. apart at 1,000-ft. intervals diagonally, allows an average well density of one well to 11.4 acres.

Carrying out the pressure-maintenance operations and general production program of the field has been facilitated and simplified by the fact that the entire lease ownership of the prospective productive area is held by Continental Oil Co., with the mineral interests being owned in their entirety by the Robert Driscoll estate and Mrs. Clara Driscoll. This has eliminated many complications that otherwise might be experienced in handling the production and return of the gas to the sand.

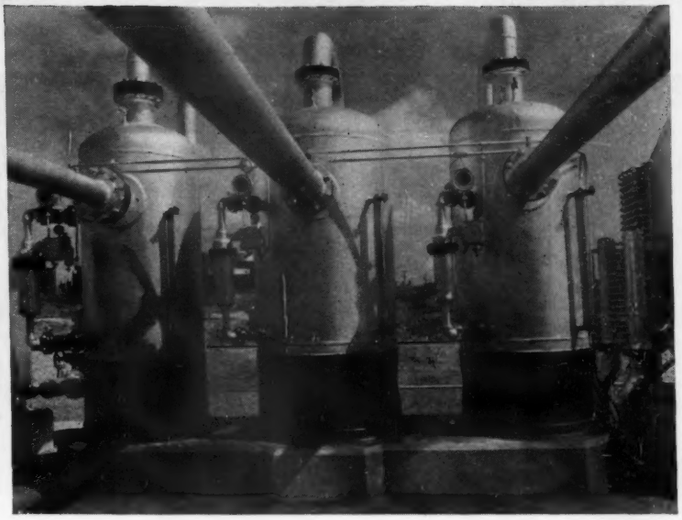
Central Separator

All production of the field is handled through a central separator and treating installation. In this, however, provision is made for three production systems. One of these is for the low-gravity oil produced from the shallow sands and which is kept entirely separate from the production from the deeper and main sand. The latter oil is 32° A.P.I. gravity, which is somewhat higher gravity than the oil from the shallower sands. The low-gravity system includes one flow separator and one test separator, which operate at a pressure of 20 lb.

The other two systems comprise a high-pressure system for the higher-ratio wells of the deep sand, and a low-pressure system for the lower-ratio wells, the latter wells being mostly those



Interior of Continental Oil Co.'s pressure-maintenance plant



Scrubber installation for Continental Oil Co.'s pressure-maintenance plant

located downstructure along the outer edge close to the water level. Each system has its separate flow and test separator facilities, the former operating at a pressure of 350 lb., and the latter at a pressure of 20 lb., the same as the low-gravity oil system. The oil production from both the high and the low-pressure systems, after separation of the gas, is combined.

Because of the different pressures involved there are two gas circuits to the compressor plant. Gas from both low-pressure systems, operating at 20-lb. pressure, is passed through 20-lb. scrubbers at the plant to a common 20-lb. intake manifold line. Pressure of this gas is boosted in three stages to a final discharge pressure of 1,220-1,250 lb. for return to the sand. In first-stage compression, the pressure is boosted to 90 lb., and in the intermediate stage to 350 lb. After intermediate stage compression this gas is manifolded with the gas coming to the plant from the 350-lb. system, and with that gas is passed to the 350-lb. scrubber, and thence to the common 350-lb. manifold line for the high-stage compression.

The compressed gas is returned to the producing horizon through two injection wells. Both are upstructure wells, located just inside the gas-cap area, one on the south side and the other on the east side of the structure. They originally were drilled in development of the sand, but, finding gas, have been reworked to serve as input wells. Several other wells, equally well located for input wells, have been drilled on other sides of the structure, and can be used as such when, with expansion of the pressure-maintenance operations, this is needed.

Gas Delivered Dry

Gas delivered to the compressor plant from the flow separators is virtually dry, and there is no commercial separation of fluids at the plant proper. Scrubbers at the plant serve only as a protection to the compressors against the possibility of liquids being carried over from the separators. They are equipped with Mercoid switches which automatically cut off ignition to the engines and shut the plant down in the event of excessive liquid carryover or accumulations.

In the compressor hookup, shown in the accompanying diagram, the 60 hp. compressor, which has been installed as an addition to the original plant to provide increased gas-volume capacity, is operated in parallel with the two original 400-hp. compressors. Each of the latter compressors has two compression cylinders. One of these compressors is operated in two-stage compression, one cylinder taking suction from the 20-lb. gas manifold line and discharging, through a 90-lb. scrubber, to the 90-lb. manifold line, while the other cylinder takes suction from the 90-lb. line and discharges, through the 350-lb. scrubber after manifolding with gas from the 350-lb. system, to the 350-lb. gas manifold line. The other 400-hp. compressor operates in single-stage compression, both cylinders taking suction from the 350-lb. gas manifold line in parallel and discharging to the 1,220-50-lb. line to the injection wells. The 600-hp. compressor has three compressor cylinders and operates in three-stage compression, the first cylinder taking suction from the 20-lb. gas manifold line and discharging to the 90-lb. line, the second cylinder taking suction from the 90-lb. line and discharging to the 350-lb. line, and the third cylinder, along with both cylinders of the second 400-hp. compressor, taking suction from the 350-lb. line and discharging to the 1,220-50-lb. line to the injection wells.

Good Water Scarce

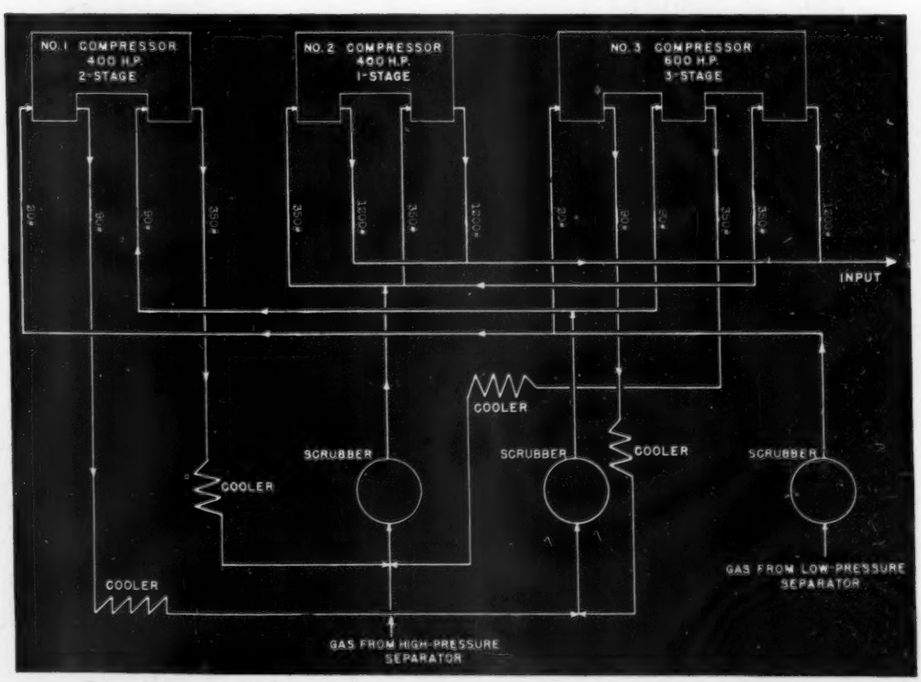
Because of the scarcity of good water in the area, all cooling at the plant, including engine-jacket water, engine-lubricating oil and interstage compressed gas, is by means of radiator-type coolers. Four such units are provided for the compressor engine-jacket water and lubricating-oil cooling, and two for interstage cooling of the gas. An additional unit is provided for cooling the jacket water and lubricating oil of the generator engine.

The jacket-water coolers are connected in parallel between the intake and discharge water headers of the three gas engines. The finned cooling section of each is 8 ft. square and 3 in. thick, and designed to handle the cooling with a maximum temperature rise of 15° F. between the inlet and discharge water.

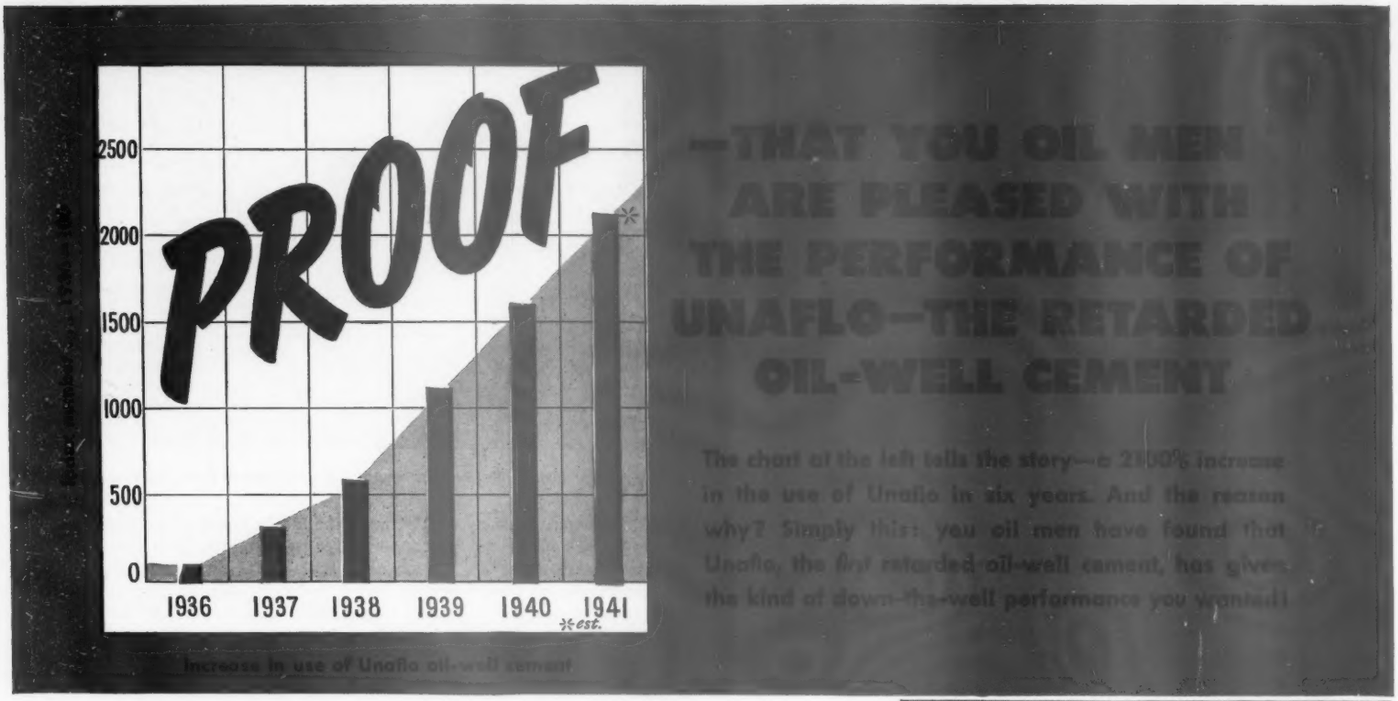
Each jacket-water cooler is a combination unit, containing a lubricating-oil cooling section located immediately in front of the water-cooling section and cooled by the same propeller fan. The lubricating-oil cooling section, also 8 ft. square, is 1½ in. thick. Each of the gas coolers also is 8 ft. square but is made up of two sections, one for cooling gas between the low and intermediate-stage compression, and the other for cooling between the intermediate and high-stage compression.

Air is forced through the radiator sections of each unit by a multibladed propeller fan, gear-driven by a 15-hp. electric motor. Electric power for these motors, as well as for plant lighting and other purposes, is supplied by a 125-kw.-hr., 220-volt, three-phase, 60-cycle a.c. generator, V-belt driven by a 165-hp., twin-cylinder gas engine.

Located adjoining the pressure-maintenance plant is the company's field pipe-line station for moving the oil production. The station consists of a 4½ by 10-in. pump driven by a 160-hp. gas engine.



Method of connecting compr essors to supply return gas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The chart at the left tells the story—a 2100% increase in the use of Unaflo in six years. And the reason why? Simply this: you oil men have found that Unaflo, the first retarded oil-well cement, has given the kind of down-the-well performance you wanted!
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2. **Reaction to different mixing waters** *found on different jobs is more uniform;*
3. **Retardation of setting time** *under different hole temperatures is more uniform;*
4. **Stiffening** *of slurry is not merely "slow." It is delayed—postponed—retarded. Thus it does not congeal but remains fluid and pumpable for entire period of retardation, after which it hardens normally.*

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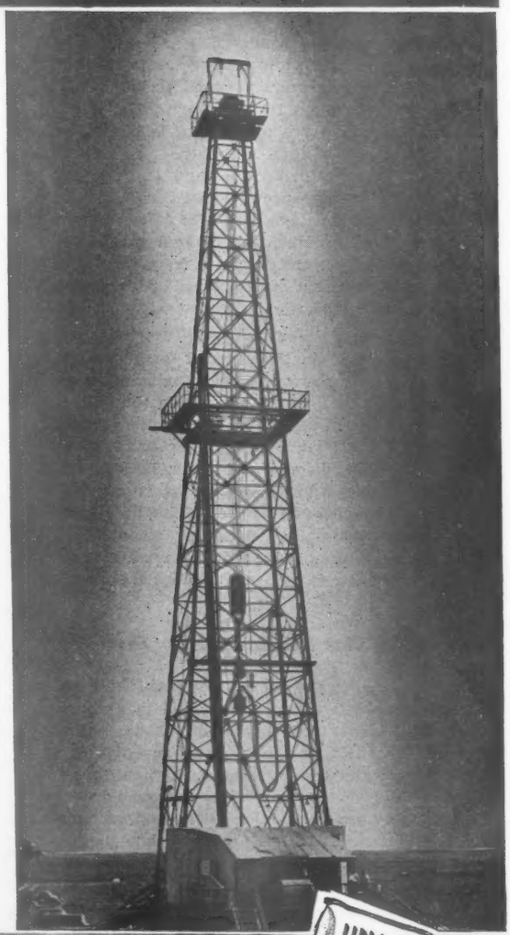
Unaflo, the *improved* retarded oil-well cement, is handled by representative dealers. Use it to protect your investment in tools and well. Get it from your dealer. Universal Atlas Cement Company (United States Steel Corp. Subsidiary), Amicable Building, Waco; Oklahoma City; Kansas City; Chicago; Birmingham.



UNIVERSAL ATLAS OIL-WELL CEMENTS

Applying Formation Logging Through Mud Analysis

By HARRY F. SIMONS

EXAMINATION of the mud ditch for shows of oil and gas in the formations penetrated has been practiced in a rough qualitative manner for a number of years, but a little over 2 years ago the scope of the mud-analysis logging method was greatly expanded when instruments became available for quantitatively determining the presence of hydrocarbons and salt water as drilling progressed through subsurface rocks. Visual examination of the mud coming from the hole to see if it had been gas cut or if it had a rainbow on it has been replaced by analytical instruments for determining not only what the formation content is but how much of the gas or oil is present.

Introduction of any new method or process in the drilling and production divisions is generally followed by a lag during which the worth of the new development is proven. It is frequently found that the application of the method has a much broader scope than first realized. During the past 2 years the use of mud logging in various parts of the country has shown what can be accomplished with it.

The method and the instruments were described by J. T. Hayward before the 1940 session of the A.P.I.[1] Briefly these consist of a gas detector, a salt-water detector, an ultra-violet light for detecting oil, a rate of penetration indicator, and instrumental means for determining the amount of fluid moving in and out of the hole. The depth, rate of penetration, gas and fluid lag are self-recording. This latter instrument enables the fluid coming out of the hole to be correlated with the depth at which it emerged from the bit and picked up part of the fluids in the formation being drilled. Using the data obtained from these instruments it is possible to tell the interface between two formations, the content of the formations, the oil-gas interface, and often the relative porosity and permeability in a producing formation.

The mud-logging procedure has two major applications, the location of possible pay zones with the determination of their economic importance as encountered, and the obtaining of information which will aid the operator in selecting the proper completion procedure. Where several oil or gas-bearing horizons are encountered, the best zone can be selected.

The information obtained is logged in a manner similar to other methods of identifying formations and the results can be compared directly with them although the data are obtained in an entirely different manner.

The log of a well in Russell County, Kansas, Fig. 1, shows the utility and effectiveness of mud logging in an area where much of the oil is found in lime formations and where logging in general is complicated by the presence of lime and salt sections. These pay zones are often less than 10 ft. in thickness although they may be greater. Many of them are of secondary importance when compared to the more prolific Lansing-Kansas City and Arbuckle zones, but in case later plugback of the well is attempted these formations are definitely located.

The presence and the intensity of oil and gas in the formations is shown on the right, while the rate of penetration is shown in feet per hour on the left. With the exception of the Topeka zone from 2,610 to 2,618 ft. each of the saturated-lime formations is accompanied by sharp increase in the rate of penetration which in turn indicates the permeability and porosity of the formation.[2]

Necessity of determining the character and content of formations while drilling is seen in Fig. 2 which shows the mud-analysis logs of two wells

Interior of truck showing instruments for analyzing the gas content of the mud, the resistivity bridge, pump-stroke counter and the depth indicator. At the left is part of the equipment for core analysis

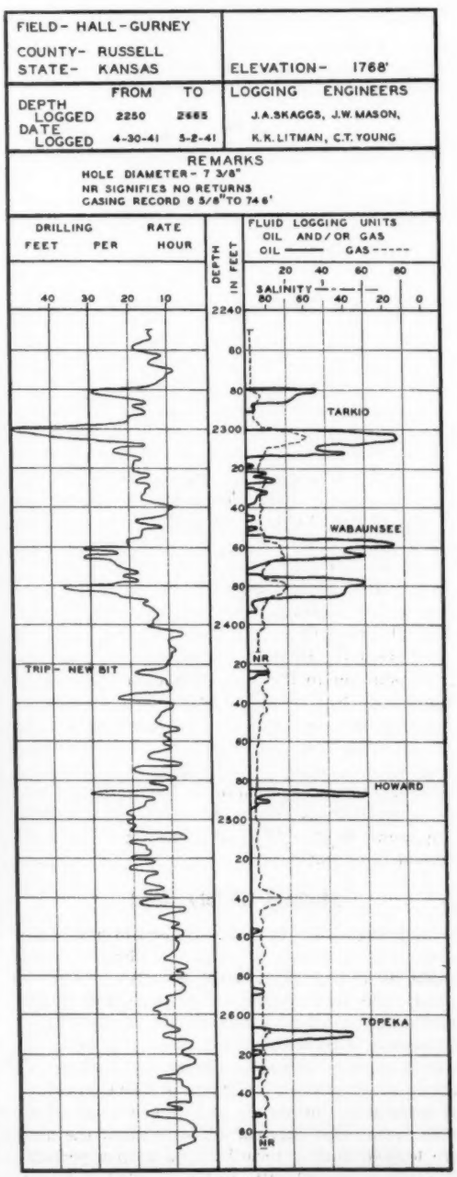


Fig. 1—Log of well in Russell County, Kansas, showing the very definite location of lime pay horizons

which were only 100 ft. apart. These wells are located in the Cement, Oklahoma, field which is notorious for its lensing of formations and the impossibility of predicting what is about to be encountered.

The log of the first well drilled is shown at the right. Difficulty was encountered in keeping the lower portion of the hole straight and it was decided to skid the rig to drill a new hole for testing the zones below 4,360 ft. The section from 3,564-77 ft., shown to be productive by the mud log, was perforated and production of 120 bbl. in 24 hours through ⅛-in. choke was obtained.

It will be noted that this log carries two gas curves, the outer curve representing the total gas content with the inner gas curve representing only the higher hydrocarbon gases.

The rig was skidded and a new hole drilled to 5,470 ft. to satisfy offset obligations. This well was completed for 20,000,000 cu. ft. of gas and some fluid. The variation of the Pennsylvania sands in this area and the presence of either an unconformity or a fault is seen by comparison of the two logs. The first well showed greater porosity and permeability generally throughout the section than did the second well. As the second well progressed it was found that the formations began to get higher until the sand found at 3,760 ft. in the first well can be correlated with the sand at 3,700 ft. in the second well.

The difference in the intensity of the gas curves of these two wells can be explained by the fact that a heavier mud was required after the indicated blowout on the second well than was used while drilling the first well.

Figs. 3 and 4 are of two wells drilled in the Chickasha, Oklahoma, gas field only one 20-acre location apart. The portions of the logs shown are of the corresponding sections in the two wells. The well shown by Fig. 3 shows a strong gas-bearing (Charleston) zone at 4,290 to 4,360 ft. and the well was completed there for 98,000,000 cu. ft. of gas through perforations in the pipe.

The well shown in Fig. 4 did not get a large amount of gas at that point but it did show oil. From the mud analysis it was estimated that the pay zone would possibly make a small oil well and the gravity would be below 30° A.P.I. The well swabbed 50 bbl. on test and oil recovered was 24.6° A.P.I. The salinity curve shown on this graph is also important as it indicates the oil-water interface in the lower portion of the sand. On further testing, water began coming in and the oil production decreased and the well was abandoned for economic reasons.

In addition to the formation data included on these logs, facts related to the drilling operation are also recorded. The mud characteristics, point of changing bits, places where circulation was lost, velocity of the fluid going in and out of the hole and other information is included. The rate of penetration is always of interest to the drilling crews as it aids in determining when a bit should be changed.

Method Widely Used

Mud logging has been widely used in practically every area in which the rotary method is practicable, including East, West and North Central Texas, the Gulf Coast of Louisiana and Texas, northern Louisiana, Mississippi, New Mexico, Oklahoma, California and Kansas. Its principal use in proven fields has been the location of upper oil or gas-bearing strata and the obtaining of information necessary to a proper completion. This means that only certain sections of the hole are logged. Such a record shows proper perforation points, gas-oil ratio to be expected and best place to set a packer, shoot, etc. Unnecessary coring of possible producing horizons is also eliminated. It also gives a permanent record on which to base remedial work.

On wildcats it provides a safe means of eliminating unnecessary cores which are costly and in some cases hazardous. In one case a well was drilled to 10,000 ft. with only five cores being taken in three different horizons, but the drilling operation was stopped about 50 times to determine whether to core a sand or not. Previously the operator would have ordered the taking of many of these cores to make sure he did not pass up an oil sand.

In areas where hard formations are encountered the procedure is to drill 3 or 4 ft. into a zone after a definite break has been noted on the rate of penetration recorder. Circulation is continued until the mud which was around the bit has been brought to the surface and analyzed. From the intensity of the showings of oil or gas a decision can be made whether to core or to drill ahead.

When drilling in soft formations, such as the Gulf Coast, drilling is stopped as soon as a possible showing is logged and side-wall cores taken before the fluid obtained in the formation is flushed out completely by the drilling mud.

On wildcat wells where there is little knowl-

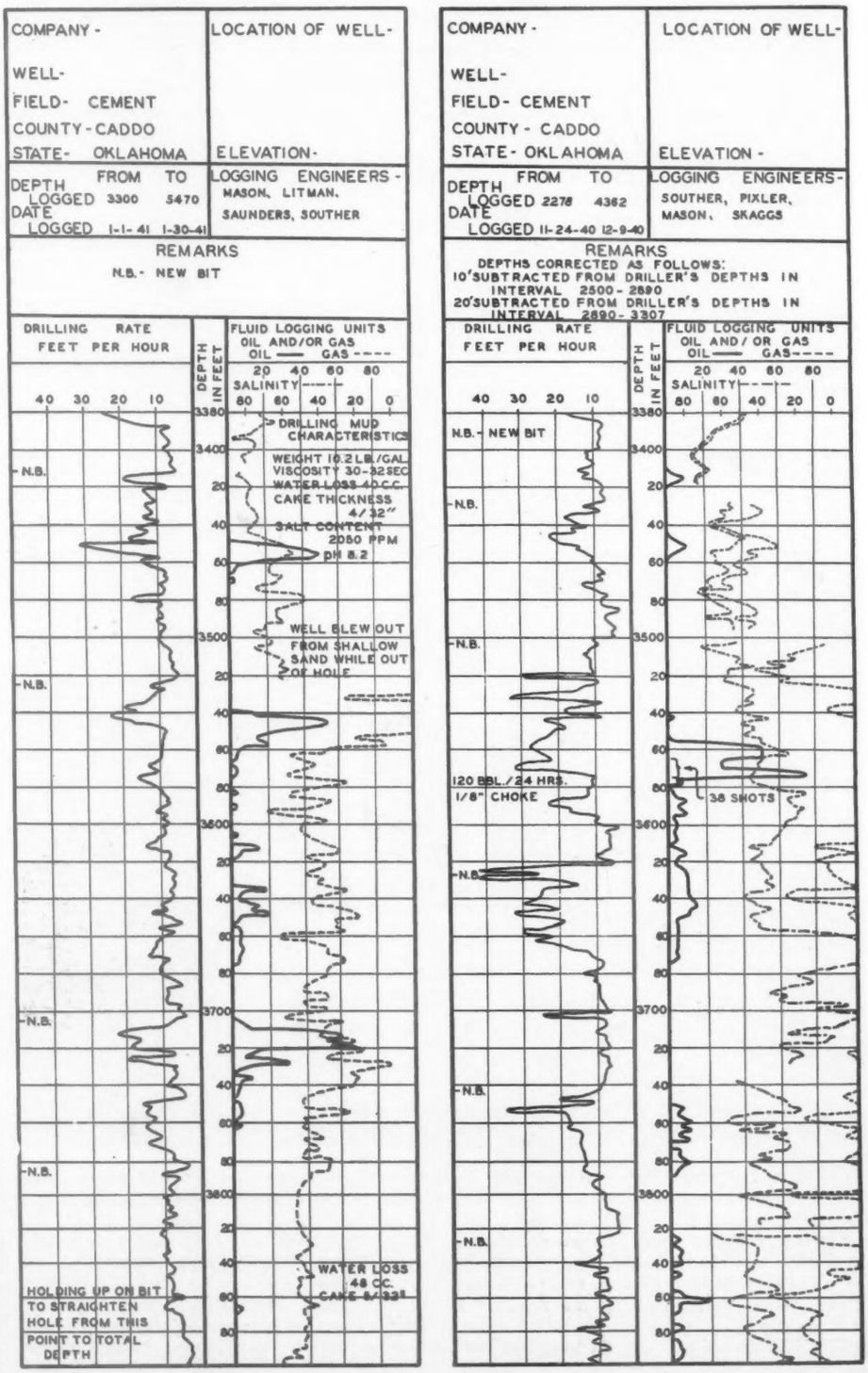
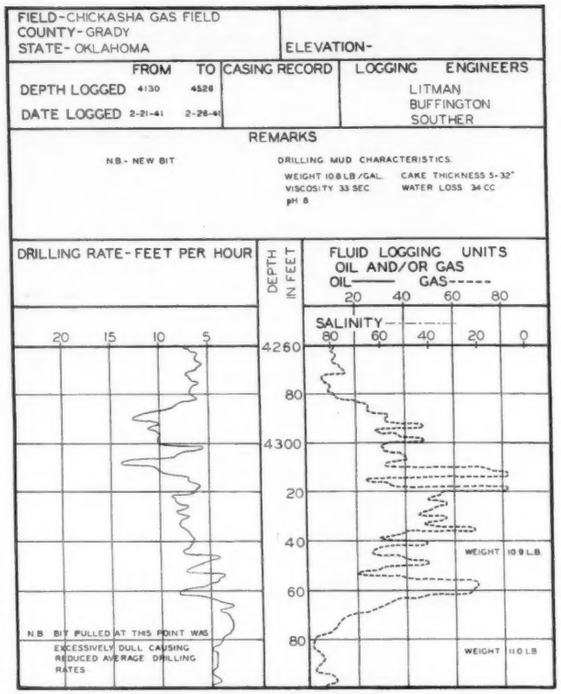
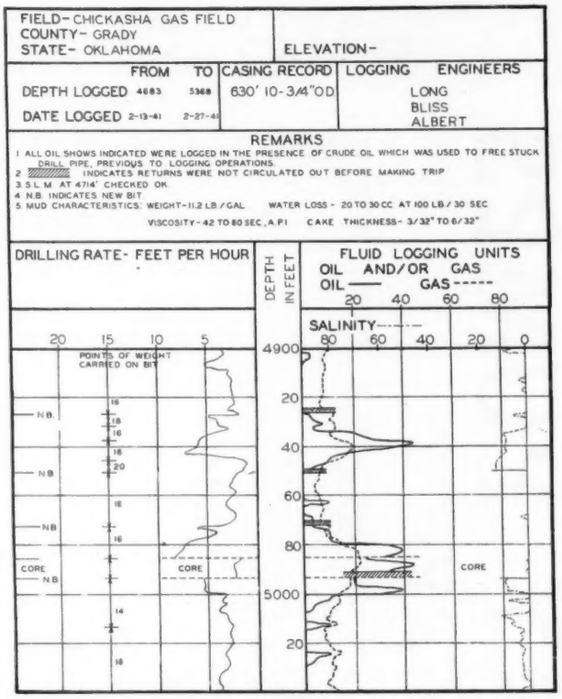


Fig. 2—Lensing of formations is shown in these logs of two wells a short distance apart. One well was completed as an oil well while a deeper gas zone was productive in the other

edge or experience with the section, mud analysis logging can supply the operator with information on whether a section may or may not be productive or be worthy of additional testing expenditures by drawing on logs to supply information on like sections where results of depth, intensity of shows, porosity and formation conditions are known.

In areas where completion practices are fairly uniform, the operator is able to predict the approximate potentials of the wells and to suggest with some accuracy the gas-oil ratio to be expected. This is accomplished through a comparison between the magnitude of the oil and gas shows and the thickness and porosity indications of the productive section as well as taking into consideration the local field history. As the log is a comparison of fluid contents, it aids in locating water-bearing zones as the absence of oil or gas in a pay zone and a continued porosity indicates the presence of water even though the salt-water bridge is not usable as a direct indicator because of the salinity of the mud.

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2 INDICATES RETURNS WERE NOT CIRCULATED OUT BEFORE MAKING TRIP
3 S.L.M. AT 4714' CHECKED OK
4 N.B. INDICATES NEW BIT
5 MUD CHARACTERISTICS: WEIGHT-11.2 LB./GAL. WATER LOSS - 20 TO 30 CC AT 100 LB./30 SEC
VISCOSITY-42 TO 60 SEC., A.P.I. CAKE THICKNESS- 3/32" TO 6/32"
DRILLING RATE-FEET PER HOUR
DEPTH IN FEET
FLUID LOGGING UNITS
OIL AND/OR GAS
OIL GAS
SALINITY
POINTS OF WEIGHT CARRIED ON BIT
N.B.
CORE

Figs. 3 and 4—Change in formation content is shown in these logs of wells only one 20-acre location apart. The log in Fig. 3 (left) shows a gas-bearing zone at 4,290-4,360 ft. while the same section in Fig. 4 (right) shows a low-gravity oil zone

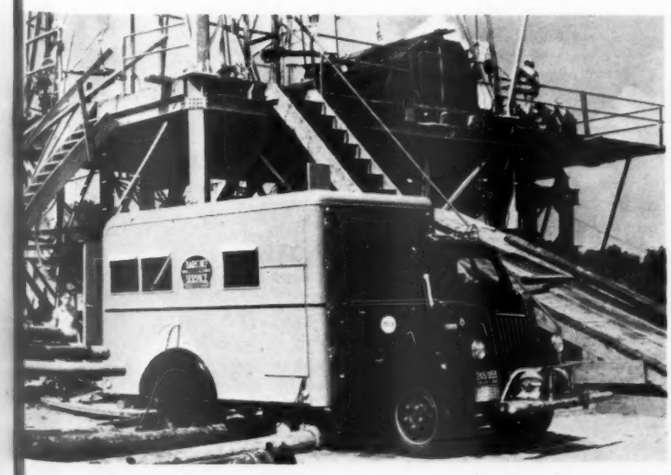
Instruments

The success of this method depends on the oil, gas or water contained in the pore space in the formation being brought to the surface in the mud stream and analyzed there. The relative amounts of oil, gas or water can be determined provided the instruments are suitable to the task.

The depth indicator shows at all times the depth of the hole and furnishes the drive for the recording mechanism. The drilling-rate meter makes a chart of the drilling rate against the depth of the hole. The pump-stroke counters enable the operator to calculate and observe the anticipated time of occurrence of a mud sample at the surface for any corresponding depth of the bit. A gas trap, through which part of the mud returning to the surface is diverted, provides the means of obtaining a continuous gas sample which passes through the analyzer for determining the relative amounts of gas picked up. A continuous sampler is placed in the mud ditch for gathering a representative sample of the mud used in drilling a definite interval of hole. An ultraviolet lamp is provided for evaluation of the amount of crude oil in any particular sample of mud. For determining the presence of salt water an electrolytic resistivity bridge with one electrode placed in the mud section and the other in flow line is used. The recording parts of the instruments are housed in a special trailer or truck with the necessary connections to the various parts of the rig.

The pump-stroke counters, gas trap and continuous sampler are very simple and their accuracy is guaranteed by a little personal supervision. The accuracy of the depth indicator and drilling-rate meter is likewise a mechanical problem although these instruments are much more complicated than the first three.

As far as the accuracy of the method is concerned, only the gas analyzer, oil detector, resistivity bridge and the amount of material contained in the drilling fluid are important. Consideration of the concentration of oil, gas or water and the sensitivity of the instruments show them to be well within the practical range. When a 7-in.-diameter hole is being drilled at the rate of 6 ft. per hour with a mud circulation of 260 g.p.m. at a depth of 4,000 ft. and the formation has 20 per cent porosity, the pore space is being drilled up at the rate of ⅓ cu. ft. per hour, or the ratio of 1 bbl. of formation fluid to 6,500 bbl. of mud. This amounts to 150 p.p.m.



Mud-logging truck alongside a derrick and hooked up ready for work. Part of the lines shown go to the gas trap and are the electrical connections for the salt-water indicator, pump-stroke counter and depth indicator

Traces of oil can be easily detected under an ultraviolet lamp at concentrations as low as 10 p.p.m. or at more than 15 times the dilution in the case outlined. If the pore space were filled with gas at normal pressure, 1,700 lb. per sq. in., at that depth, it would expand in its upward travel from ⅓ cu. ft. to approximately 38.5 cu. ft. The gas analyzer can detect gas released from the mud at the rate of 1/100 cu. ft. per hour, or at 3,850 times the dilution in the above case. Actually it is necessary to pass only about 1 per cent of the mud through the gas trap to obtain a sample suitable for analysis.

The sensitivity of the salt bridge depends upon the salt content of the drilling mud, the drilling rate, the rate of circulation of the mud and the salt concentration in the waters penetrated. Where fast drilling rates and low salt concentration in the drilling mud are prevalent, good results can be obtained with these determinations. Normally, if the mud contains more than 0.3 per cent salt by weight or has a specific resistance less than 200 ohm-centimeters, indications of salt water in the formation are not obtainable directly.

Electric current generated at the rig or purchased power can be used for operating the instruments; in addition a 1½-kw. gasoline-driven generating unit is available in the truck, or trailer, for supplying current when that obtainable at the rig is entirely unsuitable.

In addition to the equipment for logging the gas, oil and water in the formations encountered, the trailers or trucks are also equipped with complete equipment for core analysis and mud-characteristic determination. During the coring operation the normal mud circulation cycle is considerably altered and part of the log made through mud analysis will be missing. To fill in this gap, a complete analysis of the cores taken is needed.

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National Transit Pump & Machine Co.,
Oil City, Penna.

Use of Stress-Rupture Data in Inspecting Cracking-Still Tubes

By C. L. CLARK
Research Metallurgical Engineer, The Timken Roller Bearing Co., Steel and Tube Division

Bulletin on request.
National Transit Pump & Machine Co.,
Oil City, Penna.

This is the first of several articles by the author. The second will appear in an early issue.

C. L. Clark attended the University of Michigan, receiving the bachelor of science in engineering degree in 1925, the master of science in engineering degree in 1926 and the doctor of philosophy degree in 1928. During his graduate work he held the Detroit Edison fellowship in metallurgy. From 1928 to 1940 he was with the department of engineering research of the University of Michigan, as research engineer, specializing in the development and application of high-temperature steels. He was also associated with the department of chemical and metallurgical engineering, giving courses on the high-temperature behavior of metals and alloys.

Since 1940, he has been associated with Timken Roller Bearing Co., Steel and Tube Division, as research metallurgical engineer in charge of experimental and development work on heat and corrosion-resistant steels.

THE results from stress-rupture tests reveal certain information with respect to the high-temperature behavior of steels which cannot be obtained from any other laboratory procedures.[1 2 3] These results can be used as a basis for design and also to show the degree of expansion or deformation to be expected before failure occurs. They likewise are believed to be of considerable value in the inspection of cracking-still tubes after each operating cycle and it is this particular use which will be stressed in the present discussion.

The stress-rupture test differs from the standard creep test in that the stresses are greater and the specimens are carried to actual fracture. The loads are so adjusted on a series of specimens that fracture occurs at time periods varying from a few minutes up to several hundred hours. If the stresses and corresponding fracture times are plotted to cartesian coordinates, then the type curves shown in Fig. 1 result. These curves indicate, at least, the stresses below which fracture will not result for very prolonged time periods.

In the early stages of this work it was found that if the stresses and corresponding fracture times were plotted to logarithmic coordinates, then the results for each temperature were expressible by one, or two, straight lines depending upon the surface and structural stability of the steel under the given test conditions. For example from Fig. 2 it is seen that a single straight-line relationship exists for Sicromo 5S at temperatures of 1,000 to 1,500° F., inclusive. With the standard 5 Cr Mo type steel, however, a break occurs in the original straight-line relationship at temperatures of 1,200° F. and higher, as shown in Fig. 3. The discontinuity in the relationship is due to surface scaling but it is interesting to note that after the break has occurred, the results are again expressible by a straight-line, but by one whose slope is greater than that of the original line.

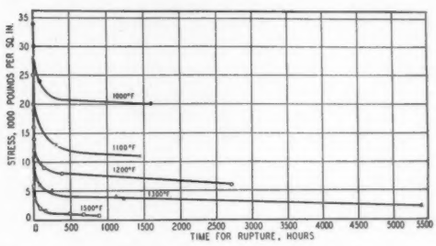


Fig. 1.—Stress-rupture curves for 5 Cr Mo steel at indicated temperatures

From the type relationship shown in Figs. 2 and 3, it is possible to determine the stresses corresponding to definite fracture times at each temperature considered. Also because of the certainty of the values upon which this relationship depends, that is, stress and time, extrapolation to time periods beyond those actually employed in the tests it is believed justified. If these results are then plotted as stress versus temperature a series of constant fracture-time curves result, as shown in Fig. 4.

The method of plotting used in Fig. 4 is believed to be of considerable value in the inspection of cracking-still tubes. Its use in this respect can be demonstrated by the following ex-

(Continued on Page 52)

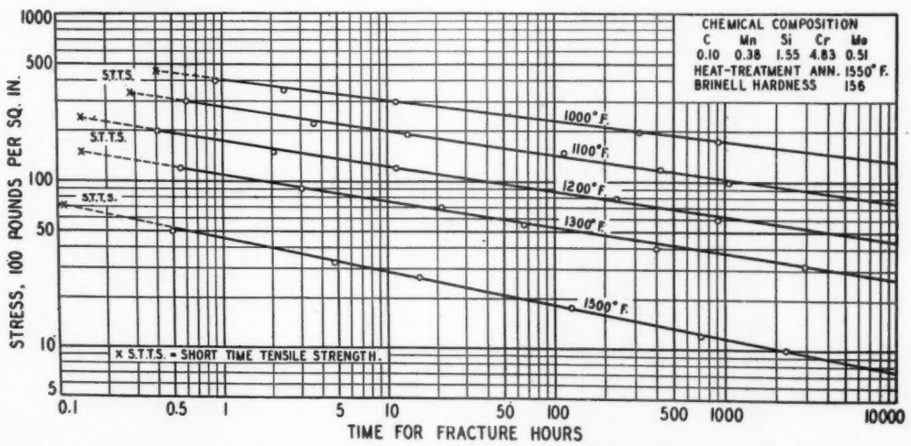


Fig. 2.—Stress versus time for rupture curves for high-silicon 4-6 Cr + Mo steel at indicated temperatures

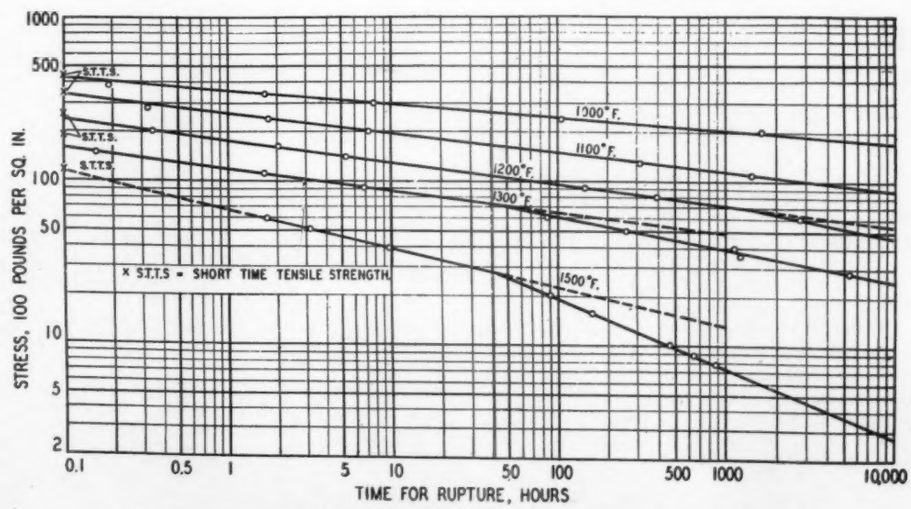


Fig. 3.—Stress-rupture characteristics at indicated temperatures of 4-6 Cr Mo steel

New Refinery Processes

. . . their place in national defense and effect on refinery economics

By T. B. LEECH
Manager Refinery Sales, Bethlehem Supply Co.

RECENT events, both here and abroad, require an examination of refinery processes which have been developed over the past few years.

In that time there have been developed two vapor-phase processes worthy of consideration. Both processes have a self-contained gas cycle. The first operates on topped crude, distillate or naphtha, at high temperatures and at pressures below 200 lb. per sq. in. It is distinguished by the fact that gas from the unit is passed through a gas-pyrolysis coil, after which the high-temperature gas is mixed with the vaporized, superheated but uncracked charge, raising the latter to cracking temperature. The mixture then passes to a reaction chamber. The products of the reaction are fractionated for the removal of residue, the overhead material being separated into gas and gasoline with the heavier portion of the gas absorbed for reintroduction into the unit. The product is stabilized; stabilizer tops also returning to the gas-pyrolysis coil. Due to the pyrolysis of the gas, polymerization and alkylation products enter into the final gasoline produced, resulting in a large yield of high-octane gasoline. Octane of a gasoline may be as high as 75 A.S.T.M.; yield naturally varying with the octane. The product is normally high in aromatics and under certain conditions of operation, may contain from 6 to 8 per cent of toluene. Outside gas may also be processed in the unit, resulting in a marked increase in yield, and some appreciation in quality.

The other type of unit was developed to increase the octane of naphtha, but now is also used in conjunction with heavy oil cracking. It is distinguished by high pressure, omission of the reaction chamber and operates at lower temperature than the first mentioned unit. Outside gas may also be charged to this type of equipment for increased gasoline production.

Methods of Construction

This type of unit may be constructed in either of two ways. In one, the liquefied gas charge passes into the conversion coil with the naphtha charge; in the other, the gas passes through the gas-conversion coil and mixes with the preheated naphtha for passage through the reversion coil. In both types of unit, the residue gas is stripped and the recovered heavy normally gaseous ends returned to the unit for further processing. These units also produce a high yield of high-octane gasoline. The product may be fractionated to remove an aviation-gasoline cut, the balance being blended back to a high-octane motor fuel.

Both of these processes are important under present conditions because of the high octane which they produce, the toluene content of one gasoline, the aviation-gasoline content of the other and the fact that each of them makes use of gas which might, unless otherwise treated in the refinery, be lost as a natural resource.

While not strictly a part of refining operations, attention at this point should be called to the fact that some natural gasoline can be fractionated in such manner that a portion of the natural is suitable for training-grade aviation fuel. The natural gasoline is first debutanized after which a total pentane cut is removed. The pentane is fractionated into isopentane and normal pentane, following which the depentanized natural gasoline is blended back with isopentane to produce approximately 30 per cent of the original feed stock as a stabilized natural gasoline. This material within the limit of Army specifications can be leaded to 90 octane with the correct volatility. The remainder of the natural can either by blended into motor fuel, or, if desirable, the light ends can be handled in one of the various types of alkylation or polymerization plants.

Note: Extended abstract of paper presented before the technical meeting of the Western Petroleum Refiners Association, El Dorado, Ark., Sept. 12, 1941.

Types of Alkylation

Various types and methods of alkylation have been widely heralded in the last couple of years. In all of these processes a usable high-octane product is made by the combination of an isoparaffin and an olefin. Alkylation may be conducted as a selective process in which a definite olefin is caused to combine with a definite isoparaffin, with very few side reactions, or it may be conducted as a nonselective process in which a number of isoparaffins may combine with a number of olefins. In the latter case, a wide variety of hydrocarbons, the majority of which are within the gasoline boiling ranges are produced. An illustration of the simplest form of alkylation which may be performed by the sulfuric acid catalyst process at low temperatures is the combination of butene and isobutane to form isooctane. The same type of equipment operated at higher temperatures may also be used to polymerize unsaturates into octylene which is an excellent blending fluid. The octylene may be hydrogenated to produce isooctane as an aviation fuel if desired. From a thermal standpoint one of the most outstanding alkylation processes is the one by which ethylene and isobutane are combined to form neohexane. This material has an octane as produced of approximately 94, but can be leaded within Army limitations to approximately 115. This product may also be made catalytically. It is of particular importance from the standpoint of conservation of natural resources as it uses a lighter gas than is generally considered feasible for commercial alkylation processes. It consequently extended the boundary of natural resources convertible to various types of motor fuels.

In all alkylation processes, the quantity of the isoparaffin available and entering into the reaction is a definite limiting factor. If necessary and economically desirable, propane and butane may be isomerized, thus increasing the raw stock for alkylation.

Consideration of the various alkylation processes brings up the necessity of considering dehydrogenation. It is possible to catalytically dehydrogenate normal butane and isobutane into normal butene and isobutene. This is done at a temperature of from 975° to 1,025° F. at a pressure of 15 to 25 lb., using chromium oxide on alumina as a catalyst. The isobutane and butene may then be polymerized using either a solid phosphoric acid or a sulfuric acid process for the production of either a high-octane blending fuel, or selectively for the production of octylene. The octylene as produced can then be hydrogenated at 75° F. and from 5 to 50 lb. over a nickel oxide catalyst into isooctane.

As the final development during the past few years, catalytic-cracking processes should be considered. The first of these processes in general use has some 250,000 bbl. per day of capacity already or now being installed. This particular type of unit operates on crude residual, distillate or naphtha as charging stock. This process is capable of producing approximately 45 per cent once-through yield of gasoline, having A.S.T.M. octane number from 77 to 81. This material has a high lead susceptibility and with a small ratio of isooctane may be readily leaded to Army 100-octane aviation fuel. The process notably produces light and heavy gas oils or recycling stocks which are highly saturated and consequently suitable for further thermal processing.

Operates on Naphtha Charge

The second of these processes operates on a naphtha charge which is heated through one heater coil in parallel with a cycle of preponderently heavy hydrogen gas heated in a parallel coil. The naphtha and hydrogen pass to catalyst chambers. Products of cracking and hydrogen leaving the catalyst chambers pass to a separator from which liquid is removed for stabilization and from which gas, preponderently heavy in hydrogen, is removed for recycling through the unit. The remainder of the gas together with stabilizer tops go to residual gas. The stabilizer bottoms are further fractionated into heavy polymer gasoline. After operation of this type of unit is well started, more than sufficient hydrogen is formed in a unit for the operation. The catalyst chambers must be periodically purged of deposited carbonaceous material by the flue gas which is used for this purpose. Yield of gasoline from this process is approximately 80 per cent when the octane is raised by 30 to 35 A.S.T.M. octane numbers. The product contains from 40 to 50 per cent of aromatics and from 15 to 20 per cent of toluene.

The third notable advance in this particular branch of petroleum refining is the use of a movable catalyst which is fed into the vapors, removed from the reacted products, rejuvenated and returned to the system. It is claimed that this process will produce an approximate 50 per cent yield of 78-82 A.S.T.M. octane-number gasoline from a distillate feed.

All of the refining processes discussed have certain advantages in that each of them produces a high yield of relatively high-octane gasoline,

(Continued on Page 51)

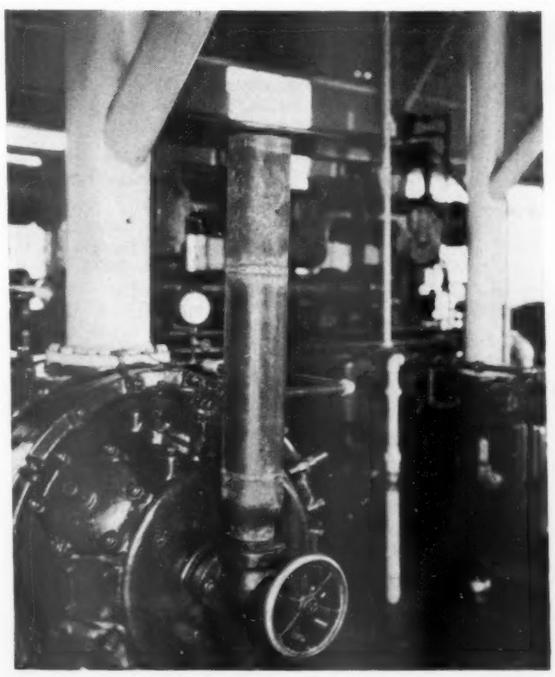
Operating Ideas

Air Hose Kept in Special Case

Compressed air is plentiful around some of the repressuring plants and is used widely for inflating tires and cleaning trucks. At one plant the air hose is kept in the attractive case shown; an old tire rim serves as a holder when the hose is not in use. Inside the plant, a regulator reduces the pressure from 75 lb. per sq. in. so there is no danger while using the hose.

Volume Chamber on Compressor Cylinder

A major oil company operating a repressuring project in Illinois has equipped the cylinders on the angle-type compressors with the volume chambers shown in the picture. These are made from 6-in. casing with a 4-in. swedge on the lower end; the upper end, of course, is sealed to make a pressure cylinder. This volume chamber produces a cushioning effect and prevents damage to the pistons and cylinders on the compressor.

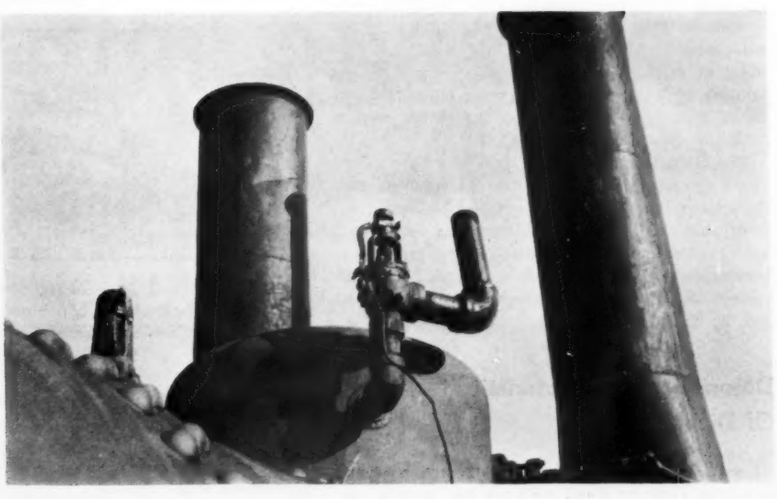


Explosionproof Motor Turns Drill Pipe

Wells in the Kilgore, Tex., townsite are completed by the reverse-circulation method. Instead of using a rotary table driven by an internal-combustion engine or the conventional steam rotary, one operator uses an explosionproof electric motor. This is connected to the differential drive, which turns the kelly, by a drive shaft and a pair of universal joints. Chief advantage is the simplicity of the hookup and the elimination of a fire hazard.

Diversion Elbow for Safety Valves

By the use of an elbow and an extra short nipple of 2-in. pipe, one drilling company effectively diverts the steam emitted by safety-valve operation or testing so as to clear the fireman's platform, and also to avoid the possibility of his being scalded by hot water blown from the safety fittings. Even with full blowdown of the steam content of a boiler through the upturned outlet, no water hot enough to cause scalds or discomfort reaches the ground, and the usual amount released on a test scarcely can be noted on the floor.



QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

Vapor Pressure by Air-Equilibrium Method

Can you give me a method for determining the vapor pressure of absorption oils by the Robinson apparatus? —J. R. C.

This equipment is one of several equipments which employ the air-equilibrium method of determining vapor pressures. The air-equilibrium method consists of bringing a measured quantity of air in contact with the oil. The oil should be saturated with air before the test by allowing a small amount of air to stand over the oil in a closed can. In the test, the oil vaporizes into the air in proportion to its vapor pressure and hence the increase in volume of the air is a measure of the partial pressure of the gasoline vapor in the air (Dalton's law of partial pressure) and of the vapor pressure of the oil. Thus, the fundamental law of liquid vapor equilibrium may be stated as:

$$\pi\ (p_{oil} + p_{air}) = P_o x_o + P_a x_a$$

in which:

π = pressure
p = partial pressure of oil and of air
P = vapor pressure of oil and air (liquid)
x = mol fraction of oil and of air (liquid) in the liquid

Obviously little or no liquid air exists in the oil sample and hence for this special case, x_a and $P_a x_a$ are zero, and x_o is equal to 1.0, so that—

$$P_o = p_{oil}\ \pi, \text{ or } = \frac{\text{volume of oil vapor}}{\text{volume of oil and air}} \times \text{atmospheric pressure}$$

The technique of contacting the oil and air is described for several equipments by E. J. Squire in the Proceedings of the Natural Gasoline Association for 1931. In these equipments the main difficulties are (1) saturation of the original sample with air and (2) equilibrium is attained very slowly. Oberfell, Alden and Hepp reported before the American Petroleum Institute (about 1928) that equilibrium was not established during a day and a half of shaking of two samples that were examined. It is doubted, however, that a practical change in the volume would occur after an hour of shaking—and perhaps the increase in volume found by these men was due to a continual transfer of air through the water used to hold the oil in the equipment.

The Robinson equipment was developed many years ago and apparently no recent references on the exact method of operating the equipment have been published. We suggest that you correspond with the company from which the equipment was purchased—or better, C. J. Tagliabue Manufacturing Co., Park and Nostrand Avenue, Brooklyn, N. Y.

Detonation Characteristics Of Diesel Fuels

I am interested in knowing what the characteristics of a good stock for diesel fuels are, i.e., what is considered high cetene index numbers, when these characteristics are applied to the fractions of the original crude-oil laboratory distillation analyses?—F. E. S., Jr.

The most reliable information on the characteristics of a product are the specifications that have been adopted by various societies and agencies. The cetane numbers that have been recommended are as follows:

A.S.T.M. (1940), Nos. 1-D, 2-D, 3-D and 4-D with minimum cetane numbers of 45, 42, 35, 30.

Western Petroleum Refiners Association (1937), No. 1 with minimum cetane number of 45.

North Dakota, minimum cetane number of 30.

High speed (14 manufacturers 1939), minimum numbers from 38 to 50 (47 average).

Medium high speed (31 manufacturers 1939), minimum numbers from 35 to 60 (47 average).

Medium speed (36 manufacturers 1939), minimum numbers from 35 to 60 (43 average).

Low speed (37 manufacturers 1939), minimum numbers from 30 to 60 (38 average).

Diesel electric locomotives (12 roads 1939), minimum numbers from 50 to 55.

Although specifications are prepared by manufacturers, they do not attach as much significance to cetane number as the specifications would indicate and are even reluctant to make definite statements as to the effect of various cetane numbers on operation except for extremely low or high numbers.[1]

In the past, many other methods have been used to measure the detonation characteristics of diesel fuels but the only one that is still recommended extensively is the diesel index. The index consists of the aniline point (°F.) multipled by the A.P.I. gravity (at 60° F.) divided by 100. In 1939 the United States military services required indexes of 45-60 and fuels for diesel-electric applications had indexes of 45-55.[1]

According to W. F. Joachim[2] the merits of the various indexes, constants, etc., are somewhat as shown in the following tabulation, but since that time (1937) the adoption of the cetane number by the delayed method has continued almost to the exclusion of other methods.

	Average relative accuracy
1. Boiling-point gravity constant	8.3
2. Cetane number (CCR)	8.4
3. Diesel index number	8.6
4. Cetene number (Moore)	8.7
5. Viscosity-gravity constant	9.6
6. Aniline point	11.1
7. Cetane number, K.M. delay	12.4
8. Blending octane number	14.4
By hydrocarbon components	14.7-69.4

Eighty-three different fuels were compared[2] with regard to the above indexes.

The definitions of some of these ignition indexes are:

Boiling-point gravity constant. — This is defined as:

$$G = A + (68 - 0.703A) \log B.P.$$

In which:

G is A.P.I. gravity at 60° F.
$B.P.$ is 50 per cent boiling point by A.S.T.M. distillation, °C.
A is boiling-point gravity constant

A high number indicates naphthenic hydrocarbons and a low number indicates paraffinic hydrocarbons.

Viscosity-gravity constant.—This is defined as:

$$A = \frac{10G - 1.0752 \log (V - 38)}{10 - \log (V - 38)}$$

In which:

G is specific gravity at 60° F.
V is viscosity, seconds Universal Saybolt at 100° F.
A is viscosity-gravity constant

Diesel index number.—This may be defined as:

$$D = \frac{N \times G}{100}$$

In which:

N is aniline point, °F.
G is A.P.I. gravity at 60° F.
D is diesel index number

Aniline point.—The temperature (°F.) at which a 50-50 mixture of aniline and the oil becomes entirely miscible (forms a clear solution).

Characterization factor.—This may be defined as:

$$K = \frac{\sqrt[3]{T_B}}{S}$$

In which:

S is specific gravity at 60° F.
T_B is average boiling point, °F. abs.
K is U.O.P. characterization factor

Hubner and Murphy[3] have also related these various factors and they report the relation between them to be somewhat as follows:

Cetane No. (delay method)	Cetane No. (CCR method)	B.P. gravity number	Viscosity gravity constant	Characterization factor	Diesel index	Blending Oct. No. (motor method)
0	..	....	....	....	..	..
10	..	....	....	....	..	85
20	..	....	....	....	..	69
30	34	201.0	0.925	10.79	19	51
40	46	190.6	0.870	11.33	37	35
50	57	183.4	0.842	11.60	53	19
60	66	177.6	0.823	11.95	65	2
70	74	173.0	0.807	12.17	76	—16
80	83	....	....	....	..	—33
90	..	....	....	....	..	—49
100	..	....	....	....	..	—66

No serious differences seem to have arisen over impurities in diesel fuels and hence the stocks that are produced in laboratory distillations can be tested without more than the customary sweetening treatment or caustic wash to avoid corrosion of the engine.

References

1. Hubner, Murphy & Egloff, U.O.P. Bull. 228, 1939, Univ. Oil Products Co., Chicago.
2. Joachim, W. F., The Oil and Gas Journal, Aug. 19, 1937, p. 62.
3. Hubner and Murphy, Nat. Pet. News, Jan. 29, 1936, p. 25.

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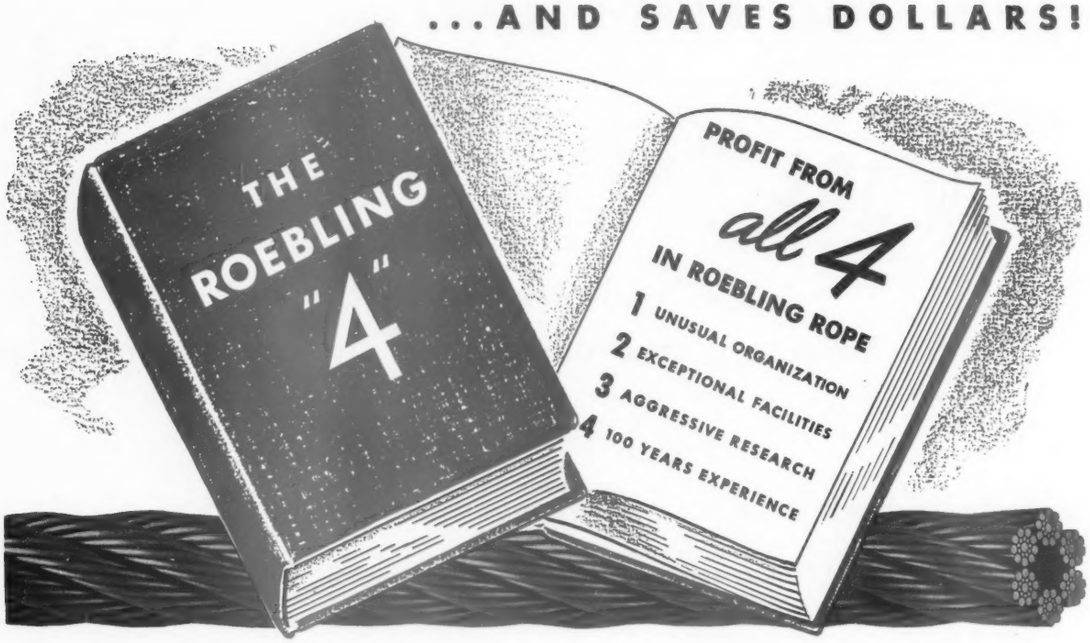

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Cathodic Protection of Montana Power Company's Pipe Lines

By C. R. DAVIS
Montana Power Co., Butte, Mont.*

THE gas-transmission lines of the Montana Power Co. consist of 375 miles of pipe line in two main systems. The West Gas Line system receives gas from the wells of the Glacier Production Co. in the Cut Bank gas field in the northern part of the state, and serves the towns of Butte, Anaconda, Deer Lodge, Helena, East Helena, Warm Springs, Galen and Wolf Creek, through 188.4 miles of 20-in. main line and 16.2 miles of 16-in., 8.6 miles of 12-in., 14.25 miles of 10-in., and approximately 3 miles of 4 and 2-in. tap lines.

The East Gas Line system receives gas from the Ohio Oil Co. near the Dry Creek field in the south central part of the state and serves the towns of Red Lodge, Roberts, Absarokee, Columbus, Big Timber, Livingston and Bozeman, through 115.6 miles of 10-in. main line and approximately 22 miles of 4 and 3-in. tap lines.

These transmission lines and distribution systems were installed during the summer and fall of 1931. The soil in which the lines are laid varies from dry, sandy to alkali, marshy soil. Parts of the transmission lines and some of the distribution systems are exposed to stray current from a 3,000-volt electric-railway system, and also a 2,500-volt electric-railway system. During the time of and for some time after the installation of the Butte distribution system, it was also exposed to a 500-volt street-railway system. The street railway has since been discontinued.

At the time of installation of the Montana Power Co. gas lines, a soil and electrolysis survey was made by engineers experienced in this type of work. They recommended that electrolysis should be controlled by insulation, an approved method at that time. The recommendations were followed during construction.

Lines Badly Pitted

Approximately 3 years after completion of construction, it was found upon inspection that some of the transmission lines were quite badly pitted due to galvanic action where there were imperfections or holidays in the coatings. One of the minor tap lines developed leaks due to galvanic action where an inferior type of coating had been used. Electrolysis had badly pitted the pipe in the Butte distribution system at holidays in the coating.

In 1935, some protective work was done on the leaking tap line by using zinc anodes. This method was effective but expensive, and unsuited for a general protective program.

In 1936, Starr Thayer, corrosion engineer for the United States System, was engaged to make a survey of the Montana Power Co. system. Mr. Thayer recommended that all lines be bonded, the distribution lines be insulated from the water mains, directional drains be installed where stray currents were present, and a program be originated to place the entire system under cathodic protection. Mr. Thayer's recommendations were acted upon and the following is a resume of the experiences of the Montana Power Co. in carrying out the cathodic protection work.

The first step was to make a complete survey of pipe to ground potentials. On the first survey, a 1,000,000-ohm per volt voltmeter was used with a copper sulfate electrode, but it was found that soil resistances were so high that a 50,000-ohm per volt galvanometer and a steel electrode gave excellent results for instantaneous readings. From the potential survey it was possible to tell which spots on the lines needed attention first. Bonding crews were started in these sections. All dressers on the transmission and distribution systems were then systematically bonded. During the survey, possible ground-bed locations and power sources were noted. Information was also obtained from the Weather Bureau on wind conditions along the line.

Next the resistances of the possible ground-bed locations were measured by means of a ground ohmer. A standard electrode for resistance tests was used, which consisted of a 2-in. piece of galvanized pipe driven in the ground 4 ft. By comparing a number of earth resistances with actual ground-bed resistances after installation, it was possible to determine that final ground-bed resistance would be approximately one-tenth the reading obtained by using the ground ohmer with this standard electrode.

The first rectifying installation was made on the 10-in. transmission line in the spring of 1937. This was a 20-volt, 20-amp. unit connected to a ground bed consisting of twenty-nine 10-in. pieces of standard-weight pipe driven into the ground 10 ft., and spaced 20 ft. apart. The ground bed had a resistance of 0.6 ohm.

Based on the results of this first unit, suitable ground-bed locations were laid out at intervals of approximately 10 miles along the 10-in. line between Dry Creek and Bozeman. It was found that most of the locations were near enough to a.c. electric lines to use rectifiers, but that at six locations some other source of direct current would have to be supplied. Prevailing wind data showed suitable conditions for wind generators at three locations, and gas-engine-generated power was used on the remaining three units. A description of the different types of units and ground beds used will be given later.

The worst pitting occurred on the 10-in. transmission line, due to the fact that it had an asphalt base coating that was not impervious to water. This line was placed under protection first, subsequently the "hot" spots on the 20-in. transmission line were protected. By the end of 1940, 90 per cent of the entire transmission system and 80 per cent of the distribution systems were under cathodic protection. The storage tanks, gathering lines and well casings of the producing company (Glacier Production Co.) were also protected.

Protection of City Distribution Systems

Most of the pitting on the distribution lines was caused by galvanic action, except in Butte, Anaconda and Deer Lodge. These three systems are also exposed to stray current from 3,000 and 2,500-volt direct-current railway systems. First, all dressers and insulating joints on the distribution lines were bonded. Then the systems were insulated from the city water lines by using formica bushings installed between the gas service and the house gas regulator. After the insulation was complete, directional drains from the electric-railway systems were installed. The current thus drained gave some cathodic protection. Potential surveys were made after the drains were installed, giving an indication of where added protection was needed. Sufficient cathodic protection units were installed to reverse all pipe potentials that were positive to ground. Next it was necessary to install connections through controlled resistances to the water lines, telephone and telegraph cables.

Types of Units

Four types of cathodic protection are in use, consisting of copper oxide rectifiers, motor generators, wind generators, and gas-engine-drive generators.

The most dependable source of direct current has proven to be the copper oxide rectifiers. Standard 20.5-volt, 1.26 fullwave Rectox stacks, and 1,650-volt-amp. transformers were purchased. A unit for each ground bed is designed by paralleling the correct amount of stacks to give the desired amperes. If more than 20.5 volts is needed, two or more units are connected in series.

Two motor generators are being used for protective units on the Butte distribution system. One is used on a high-resistance ground bed and the other is used where the potential to ground has very wide variations. The generator at the latter location has interpoles connected in the circuit in such a way that as the potential to ground rises, a current is caused to flow in the interpole windings, which produces a field flux to assist the shunt field, causing the output of the generator to be increased. This arrangement maintains the potential to ground on the pipe practically constant.

After the wind generators were installed, the input was checked with a recording ammeter over a period of 6 months, and it was found that in most installations current was being generated in large enough amounts to revese pipe polarity for at least 75 per cent of the time.

Photographic Recording Voltmeter

In order to check the effect of polarization on the pipe protection in connection with the wind generators, the photographic recording voltmeter was developed.

This recorder consists of a spring-wound movement for advancing a 16-mm. movie film at a uniform speed of exactly one frame each 15 minutes. The clock movement also actuates two switches. One controls the light source for exposing the film and the other the voltmeter element.

The photographic element consists of a lens focused on the dial of high-resistance (50,000 ohms per volt) galvanometer. No shutter is used, as the lens and the galvanometer are enclosed in a lighttight compartment. The time of exposure is controlled by controlling the length of time the light is on. In order to eliminate polarization of the ground electrode as much as possible, the

(Continued on Page 48)

*Condensed from a paper delivered before the Pacific Coast Gas Association convention, Del Monte, Calif., Sept. 10-13, 1941.

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galvanometer is connected to the ground electrode and the pipe only during the time the film is being exposed. To accomplish this, the clock actuates a mercury switch connecting the galvanometer in the circuit 30 second before exposure, which allows the needle to come to rest, and remains in the circuit 30 seconds after exposure. The light source, which consists of a 32-c.p. automobile headlight bulb fed by two dry cells, is flashed by the clock actuating a mercury switch at the exact time the frame on the film is in place. This clock will operate 30 days on one winding, and a 50-ft. roll of film will last 21 days, taking one exposure each 15 minutes.

Polarization

Observations made with the photographic recorder in conjunction with a recording ammeter on one of the wind generators show that over a 2-month period the polarization aided in retaining the potential of the pipe so that at least 0.15 volt negative was maintained during the entire period. The ammeter indicated that the generator was putting current into the line 67 per cent of the time during this period, and the longest period during which no current was going into the line was 20 hours; however, several of these 20-hour calm periods occurred during the test period. Before protection was put on this line, which is a 20-in. line with excellent coating, the potential to ground was 0.2 volt positive. Another test, wherein it was possible to vary the current input, which was run with these same instruments on 20-in. pipe in similar soil, but protected only with a primer coat of paint, showed that it required 90 hours for the line to become completely depolarized from its highest potential obtained from a fixed current which had been on the line for 2 weeks.

The results from these tests indicate that the better the coating on a pipe, the longer the effect of polarization will last. On bare pipe in low-resistance soil, the effect of polarization would be very small.

Polarization on a fairly well coated line will raise the effectiveness of a wind generator at least 20 per cent. A good wind generator is a cheap, trouble-free source of direct current where the wind is steady enough to cause generation of current at least 60 per cent of the time, and the pipe is fairly well coated.

At the time the company started its cathodic protective program, gas engines especially designed for cathodic protective units were not available. Because of this, considerable experimental work was done developing a unit using standard gasoline engines for a power source.

Two direct-connected gas-engine generators are also being used. One is a 64-volt U. S. Plant with a four-cylinder water-cooled engine, and the other is a single-cylinder water-cooled Jacobs special cathodic protection unit. Both of these units are giving good service.

Ground Beds

Wherever the soil was deep enough, vertical driven ground beds were installed. The driven depth varies from 8 to 20 ft. The spacing between anodes varies from 10 to 20 ft. depending on the length of low-resistance ground available. Heavy railroad rails are preferred for anodes. The first ground beds were tied together by rubber-covered copper cable with heavily tarred joints. Replacement costs were excessive due to the difficulty of maintaining insulation on the wire. Wherever a small fault occurred in the insulation the wire disintegrated in a short time causing the resistance of the ground bed to increase. Present practice on driven ground beds consists of tying the anodes together with boiler tube aboveground. If the header must be buried because of right-of-way restrictions, heavier material such as light railroad rail is used.

Where driven ground beds are impractical because of shallow soil depth, horizontal ground beds are installed using heavy railroad rail buried from 4 to 6 ft. About 3 lb. of stock salt per linear foot of rail is used as an electrolyte. Four-inch drain tile is laid horizontally the full length of the beds about 1 ft. above the rail, with both ends of tile brought to the surface. This permits the bed to be flooded and salted as the need arises.

The ground bed used to protect the center of the Butte distribution system is unique in that it is installed in an abandoned drift of a manganese mine 200 ft. below the network of pipes it is protecting. The bed consists of a number of steel plates covered with about a foot of waste mining material well salted. While the bed has a rather high resistance, the unit connected to it completely protects an area approximately eight blocks square on the gas-distribution system, together with all the bare piping in the mine and several blocks of telegraph cable.

Some abandoned artificial gas mains are also being used where they are in the right location and can be isolated from other underground structures.

Operation of the cathodic protection units installed on gas-transmission lines during 1940 cost $4.60 per mile of equivalent 3-in. main. After full protection is completed and it becomes necessary to begin replacing ground bed, it will cost $5.80 per mile of equivalent 3-in. main per year to permanently protect all pipe. This will amount to approximately one-fourth of all maintenance costs. It is felt that this annual expenditure is justified and will result in a considerable saving in the long run. The hazards of leakage and the very heavy expense of future pipe replacement are practically eliminated. That the application of cathodic protection to pipe which is still in good condition is economical, is evidenced by the fact that we are fully protecting 8,200,000 sq. ft. of pipe with 885 amp., which is equivalent to three-fourths of a microampere per square inch, whereas most authorities agree that bare pipe requires 20μa. per sq. in. or 26 times the current density we are using.

On the distribution system, the average current density is 7μa. per sq. in. which is about one-third the current density necessary to protect bare pipe. The cost of protecting the cathodic protection on the distribution systems is $30.80 per mile of equivalent 3-in. main per year.

High-Pressure Absorption Of Natural Gasoline

By E. J. SQUIRE
Shell Oil Co., Inc., Los Angeles, Calif.*

THE general subject of natural-gas conservation at this time should be foremost in the minds of all of us. As a result of controlled production, gas injection, depletion of reserves and increased demand, the present quantity of gas blown to the air is only a fraction of that formerly wasted. Further conservation measures are necessary in some locations but in many of the fields no wastage occurs and the time is not far distant when practically all of the gas produced in the State of California will be utilized. With this in view Shell Oil Co. with the cooperation of Pacific Lighting Corp. and Southern California Gas Co. is pioneering in this one phase of oil-field fuel conservation by converting its Ventura natural-gasoline plant from low-pressure to high-pressure absorption. As this article deals primarily with operations at Ventura we will briefly review the development of the natural-gas and natural-gasoline industries as well as production practices in that field.

Control measures have now reduced the Ventura gas production to an average of about 90,000,000 cu. ft. per day of which 63,000,000 cu. ft. is sold and only a nominal amount wasted. Furthermore, by regulating the gas-oil ratios, the gas production has been varied throughout the year to meet summer and winter demands without changing the quantity of oil produced. Nearly all of the natural gas which is produced from oil-bearing formations contains a small percentage of gasoline in vapor form.

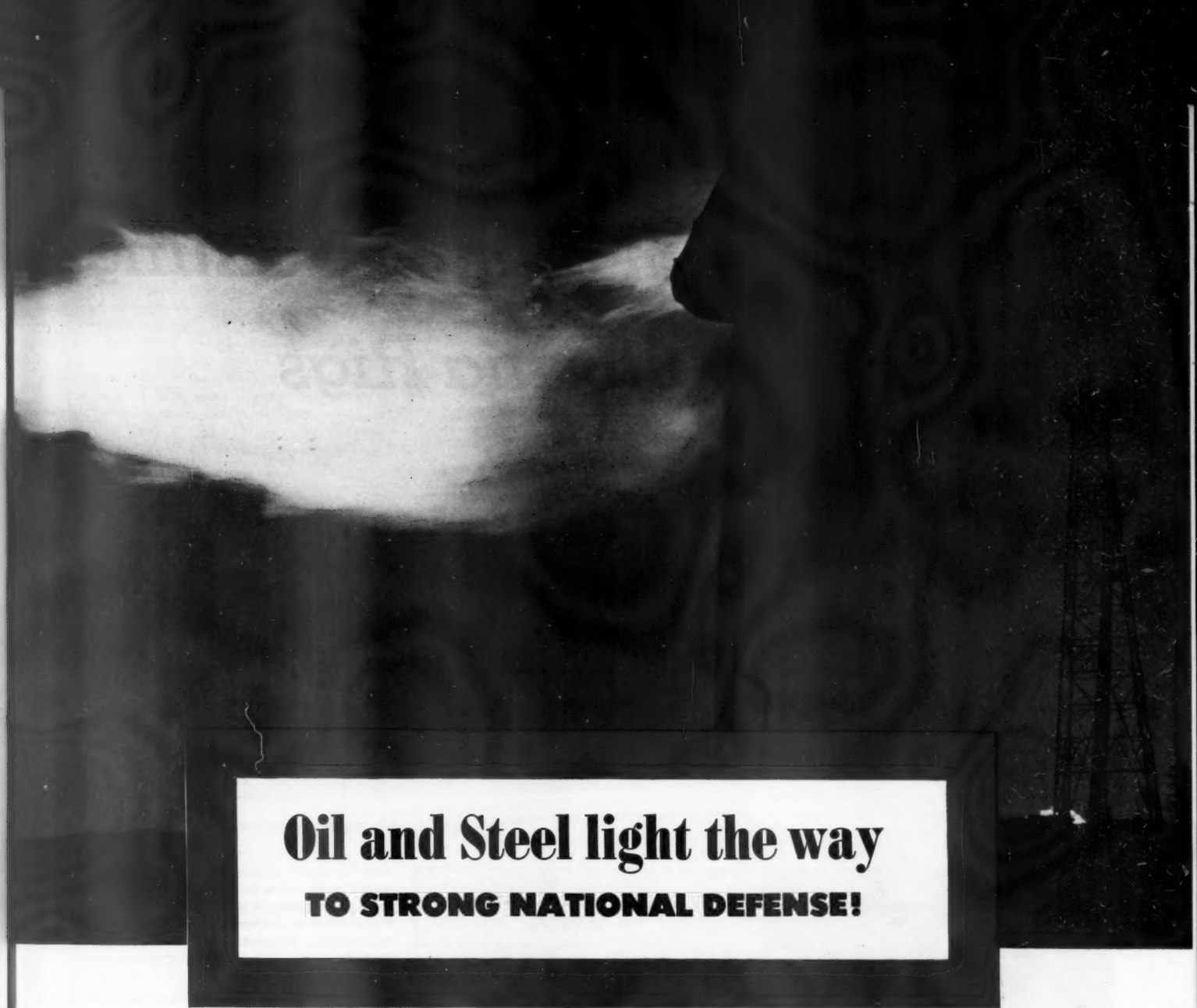
The Shell Oil Co. absorption plant at Ventura was built in 1926 and, in accordance with the general practice at that time, was designed to operate with absorber pressures of 30 lb. Also, as previously stated, only sufficient compressor capacity was installed at the plant to collect the low-pressure-gas from the field and put it through the plant at the 30-lb. absorber pressure. Approximately 80 per cent of the gas treated in this plant is subsequently delivered to Pacific Lighting Corp. and Southern California Gas Co., both of whom own and operate compressor plants in which the gas is compressed to pressures ranging from 250 to 400 lb. for transmission purposes.

These gas companies have made large investments in compressor stations and transmission systems for the sole purpose of distributing Ventura gas and are therefore vitally interested in any conservation measure which will aid in prolonging the time during which their facilities can be used to full capacity.

Under this arrangement Shell will deliver to each gas company sufficient gas to meet the sales obligation plus an additional quantity to allow for shrinkage during gasoline extraction. This will be from 80 to 85 per cent of the gas produced and will be delivered directly from the field as wet gas or after a slight scrubbing with a small quantity of absorption oil to remove only the heaviest fractions and eliminate any possibility of condensation at the gas-company compressor stations.

Gas-fuel consumption under the new conditions will be from 1,000,000 to 1,500,000 cu. ft. per day less than in the past, depending upon the quantity of butanes and propane required as liquid products. This quantity, if used currently for domestic consumption, would supply the fuel requirements of some 6,500 to 10,000 families or, if allowed to remain in the formation at Ventura during the next 10-year period would amount to a reserve of from 3½ to 5½ billion cubic feet, enough to supply the domestic requirements of the city of Pasadena for a period of 2¼ to 3½ years.

*Condensed from a paper delivered before the Pacific Coast Gas Association convention, Del Monte, Calif., Sept. 10-13, 1941.



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LINE PIPE . . . NORMALIZED CASING AND TUBING

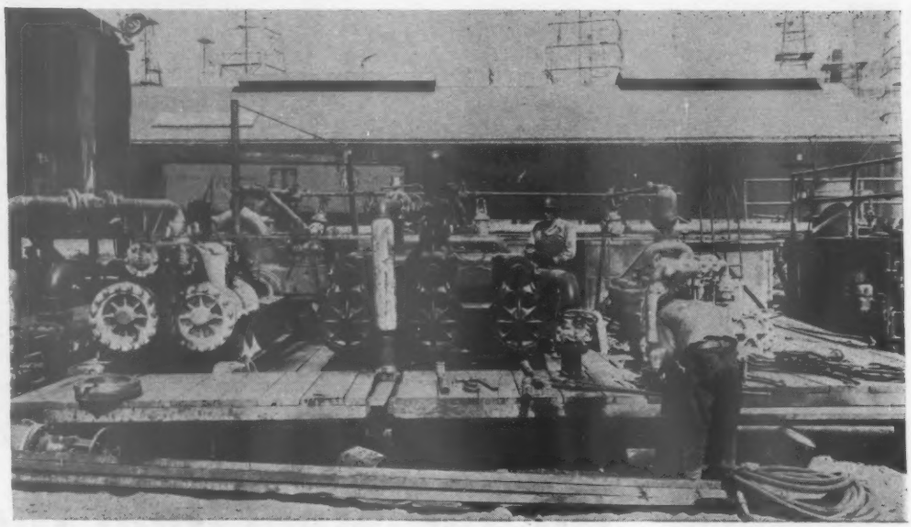
Triplex Steam Pumps Gaining Favor on California Rigs

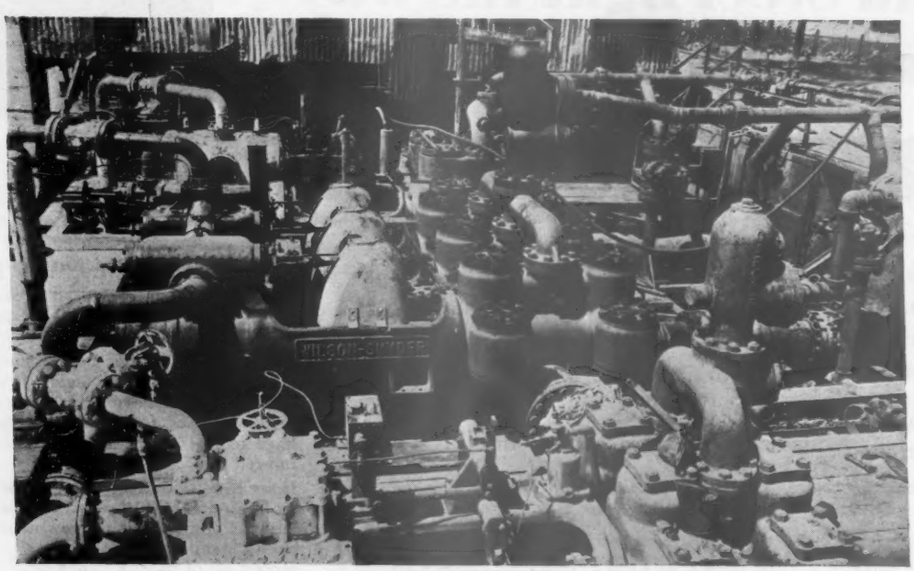
By T. P. SANDERS

DUPLEX steam pumps for circulating the mud have been standard equipment for rotary-drilling rigs for a number of years but efforts to increase the efficiency and depth capacity has resulted in the introduction of a triplex pump. The second such pump has been put into service in California, this time in the Ventura field. It is identical to the pump previously used in the Ten Section field and is being used by the same company, Shell Oil Co., Inc. The location, known as 37 Edison, is within the Ventura Avenue producing area, but it appears that the test is destined to reach much greater depths than the surrounding wells. The other triplex pump, which made its appearance in California some months ago, has been used on three 8,200-ft. Ten Section wells and has now been incorporated into the drilling machinery which recently spudded in for a deep test in the Canal field.

Characteristics of the new triplex pumps have been quite thoroughly established, but are new in rotary drilling and their use on deep tests in two different fields will furnish additional data for evaluating this departure from the long-established duplex design. Two considerations were primarily responsible for the triplex mud pump. One was the possibility of making a pump which by itself would have sufficient capacity for deep drilling, thereby making it unnecessary to compound two pumps. The other consideration was the realization that the overlapping of strokes would greatly reduce pounding and would produce a more constant pressure on the discharge manifold.

The triplex pump could not be built merely by adding another set of cylinders and pistons to the duplex design. That would have made for excessive weight. By using cast steel for the mud end and semisteel for the steam end, strength was obtained without adding greatly to the weight of a conventional duplex pump.





Left: Triplex mud pump sandwiched in between a mud-mixing pump (foreground) and a duplex pump, being used as a standby, at a Shell Oil Co., Inc., rig in the Ventura field of California. Above: Steam end of the triplex pump, the second of its kind to appear in California

An entirely new design for the steam-valve mechanism made it possible to operate on a much shorter cushion in the steam cylinders, thereby reducing the necessary cylinder length and also reducing the steam requirement. The triplex is an 18 by 7 by 20-in. pump, but its over-all length is less than regular pumps having a 20-in. stroke. Over-all length including skids is 12 ft. 7 in.; width is 7 ft. 11 in., and its height, including the air chamber, is 8 ft. 9 in. Its weight is 31,500 lb. It can be moved on the highways without any dismantling and without securing a special permit.

Mud End

A new feature is seen in the construction of the mud end of the pump. Each cylinder is a separate steel casting, and they are all interchangeable. A serious accident might call for a new cylinder casting, but not for an entire new mud end. The cast-steel manifolds, together with the three cylinder castings, make five separate castings in the mud end.

Installation of the liners is unique. A large-diameter setscrew extending through the center of the cylinder head is used to tighten the liner in the cylinder casting without removing the head. Within the cylinder is the liner spacer, which has an external rim for centering the liner. The spacer ring butts against the end of the liner and is held in place by means of the large setscrew previously mentioned. Friction is reduced by means of a roller thrust bearing so that when the adjusting screw is turned down, the operator can tell easily when there is a metal-to-metal contact at both ends of the liner. This arrangement not only makes it possible to ascertain that the liner is tight at all times, but it also makes for convenience in removing and exchanging liners. A packing ring prevents leakage around the adjusting screws.

Valve Mechanism

The new design of the valve mechanism has cut down lag to an extent where the action is almost instantaneous. Although the pistons work on a short cushion and never strike the heads, the minimum stroke observed has been 19⅝ in. The valve gears have roller bearings and complete grease-lubrication system.

Because of the accurate valve operation and the free fluid passages, it has been found possible to operate the pump at a working pressure equaling 95 per cent of the stalling pressure in some instances. For example, on a Ten Section well

drilling at 7,600 ft.; the triplex pump with 6-in. liners operated at 30 s.p.m. against a pressure of 2,350 lb. with a steam pressure of 265 to 270 lb. on its manifold. A 6¾-in. bit was being used on 3-in. drill pipe, and the pump was delivering a calculated volume of 409 g.p.m. (Drilling Equipment Directory, 1941-42, p. M-7). Running at a speed of 45 r.p.m., this pump worked against pressures as high as 2,650 lb. carrying a manifold steam pressure of 300 lb. Its theoretical delivery at this speed was 614 g.p.m., and even at this speed no trouble was experienced in keeping up steam pressure at the boilers, though of course the triplex used more steam than the conventional duplex pump as more fluid was being delivered per unit of time. The average working pressure for the triplex pumps is 85 per cent of the stalling pressure.

Although the triplex pump is intended to handle the mud without help during deep drilling, customary California practice calls for using a second pump as a standby. Rigs on which the triplex pumps have been used so far were equipped with conventional duplex pumps as standby units.

●

New Refinery Processes—Their Place in National Defense

(Continued from Page 40)

and some portion of the product from each is a necessary material in our national-defense program.

We have in the United States some 4,500,000 bbl. per day of installed refining capacity. Approximately 500,000 bbl. of this capacity represents either purely skimming equipment or processes which are so obsolete that they cannot be economically operated. Of the remaining 4,000,000 bbl. of capacity, approximately one-third is completely new, up to date and efficient, having been installed during the past 3 years. In the order of 3,975,000 bbl. per day of crude has been charged to stills during the past few weeks. This quite closely approaches the limit of balanced refinery capacity without starting completely obsolete equipment which cannot be economically operated and which will not produce the quality of product generally required by existing passenger cars.

Fortunately for the United States, the oil industry during the past few years has continued to explore methods of economically manufacturing high-octane gasoline.

Dr. R. E. Wilson, while with the OPM, requested that the aviation-gasoline capacity of the country be immediately increased some 30 per cent. More recently, Petroleum Coordinator Ickes has requested that the existing capacity, in spite of recent increases, be further increased by approximately 50 per cent or on "an amount sufficient to meet the emergency." It has been and still continues to be difficult to forecast the necessary requirements of aviation gasoline. This because of the fact that our lend-lease and defense programs are themselves continuously expanding.

It appears, therefore, that the present production of approximately 45,000 bbl. per day of fighting-grade aviation fluid will have to be raised to some 70,000 bbl. per day as a minimum.

The first 7 months of this year saw a record passenger-car production of 2,713,000. Some curtailment of manufacturing is occurring the last half of the year, but in spite of this, 1941 is going to see an exceedingly large motor-car fabrication.

For the first 5 months of 1941, the gasoline consumption over the corresponding period of the previous year was 12.2 per cent. The quantity gain for the first 6 months was equal to the total gain of most normal years.

From the foregoing, it appears that the United States refining throughput and demands for refined products is very close to what the market requirements would have been if the war in Europe had not occurred, exports had remained normal and the normal increase in consumption in this country had taken place. It is thus apparent that if the European war ends in short order, the increase in exports up to normal requirements would more than compensate for the slight flattening of the marketing curve in the United States, and so place a greater demand on United States refineries.

From the utterances of most of our own and the British administration, emergency plans are to be carried through the year 1943. It is to be expected that an unusual demand for petroleum products will continue to increase the longer this nation is held to a defense outlook. At the same time, additional refining capacity will very probably be damaged or destroyed in Europe and the Near East the longer the war continues.

In so far as possible, new refinery construction should take advantage of and use as a basis for processing, light gases which are not commonly nor completely utilized in the manufacture of motor fuels.

It has been stated that approximately one-third of our usable refining capacity has been built during the past 3 years. It will, therefore, be apparent that any new refining capacity installed should not only be capable of producing a certain quantity of aviation gasoline or other defense products but should also be built to meet competition by producing the largest quantity of high-octane motor fuels for general passenger-car use.

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1891 *No Other Joint Has A Comparable Record of Service* 1941

Use of Stress-Rupture Data in Inspecting Cracking-Still Tubes

(Continued from Page 39)

ample. Assume a 5 Cr Mo tube 5-in. o.d. by ½-in. wall to be operating under an oil pressure of 400 lb. Then its maximum fiber stress would be of the order of 2,000 lb. and from Fig. 4 it is seen that the tube-metal temperature could attain a temperature of 1,375° F. without fracture occurring in 1,000 hours. If, after the tube had been in service, the wall thickness were reduced to 0.30 in., due to oxidation on the outer wall and corrosion on the inner, then the maximum permissible temperature would be of the order of 1,300° F. As the wall thickness becomes further reduced the maximum permissible temperature would continue to decrease and would be only 1,200° F. when the wall thickness became 0.15 in. It is thus possible on this basis to determine the extent to which the tube-metal temperature can rise before the operating cycle must be discontinued and the coke removed from the tubes.

In the preceding example, the maximum permissible temperatures were based on a fracture

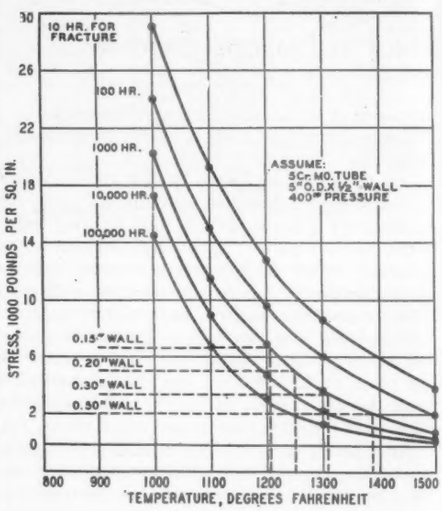

Fig. 4—Method of using stress-rupture data in the inspection of cracking-still tubes

time of 1,000 hours. This particular fracture-time period was selected since, during each operating cycle, the tube wall is at this maximum temperature for only a relatively short-time period. say 2 days of a total 30-day cycle. Likewise, the temperature around the tube circumference may vary considerably and the cooler portion of the tube probably exerts a strengthening effect on the hotter section. If desired, however, other fracture-time periods, such as 5,000 or 10,000 hours could be used just as well.

The use of stress-rupture data in this particular application is believed preferable to creep data since the rates of deformation encountered are more similar to those of the rupture tests and furthermore, the relative high-temperature strength characteristics of many steels vary depending upon the particular rate of deformation employed.

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Pipe-Line Activity

Shell Purchases Basin System in West Texas

Shell Pipe Line Corp. has purchased from the Basin Pipe Line Co. an extensive gathering system in the Wasson pool of southern Yoakum and northwestern Gaines counties, Texas, and a trunk line extending 93 miles southeast to the Cosden Petroleum Corp. refinery at Big Spring. Announcement of the purchase was made last week by T. E. Swigart, president of the Shell Pipe Line Corp. Consideration was not divulged.

Coincident with taking over operation of these facilities on October 1, Shell will extend the trunk line 5 miles north in the Wasson pool and 20 miles east from Big Spring to the Westbrook station on its main line to Cushing, Okla., and Wood River, Ill. The new line passes between the Seminole and Cedar Lake pools of Gaines County.

The addition of the wells connected to the Basin system will bring Shell Pipe Line's total connections in the Wasson pool to approximately 550 wells. Shell has been serving the Wasson pool since September 1939, through its line running south via Hobbs, N. M., to McCamey in Upton County, which now is operating at full capacity.

Addition of the Basin line will give Shell ample capacity to serve all of these wells and also will enable it to handle more crude from New Mexico and the Permian basin. Shell will deliver approximately 2,500 bbl. daily of Wasson crude via the Basin line to the Cosden plant.

Acquisition of the new line was effected through cooperation of the Mid-Continent Supply Co. of Fort Worth, and Brown & Root, Inc., who acquired all of the stock from its various stockholders and are arranging liquidation of the corporation.

The Basin Pipe Line Co. was placed in operation on July 15, 1940, affording another outlet for the Wasson pool, which at that time was under pipe-line proration because capacity of the carriers serving the area was limited. C. D. McIver was president of the Basin, with A. L. Lipscomb, secretary-treasurer.

Standard of Louisiana Requests River-Crossing Permit

Standard Oil Co. of Louisiana, through its Shreveport, La., office, has filed application with the U. S. Engineer office, Vicksburg, Miss., for a permit to place two 8-in. pipe lines across Red River, 3 miles south of Shreveport.

United Wishes to Remove 63-Mile Gulfport Lateral

The Federal Power Commission is considering United Gas Pipe Line Co.'s application to remove a 63-mile section of its "Gulfport lateral line" in Mississippi and use the pipe in new line to serve defense industries in several southern states.

The section extends from the company's Benton-Mobile pipe line to a point near Gulfport, Miss., and carries gas resold to distributing companies in Gulfport, Biloxi, and other Mississippi cities.

The company proposes to use the pipe in a new 200-mile line which would serve the territory now served by the Gulfport lateral line, and also defense industries in the Mobile, Ala., and Pensacola, Fla., areas. The line will carry gas from a field at Lirette, La.

The application says that even with a priority rating it would be difficult to get delivery of sufficient pipe for the new line.

Rocky Mountain System Reduces Pipe-Line Rates

The Rocky Mountain Pipe Line Co. has announced a reduction in crude-oil pipe-line rates from 45 cents to 30 cents per barrel for shipments from Lance Creek, Wyo., to Denver, Colo., and from 30 cents to 20 cents for shipments from Lance Creek to Cheyenne, Wyo., effective 30 days after tariff is filed with the Interstate Commerce Commission. This will be about November 1.

Tennessee Commission Favors Proposed Natural-Gas Line

The Tennessee Commission after hearings has found "urgent need" for the supply of gas proposed by the Tennessee Gas & Transmission Co. for which the applicant wishes to construct a pipe line from Louisiana across Mississippi and Alabama and into Tennessee. The certificate of convenience and necessity is being withheld for 120 days and until the commission is satisfied as to the applicant's financial arrangements. The certificate will limit the authority of the applicant to wholesale for resale locally.

Discussing the opposition made by railroad and coal companies the Tennessee Commission says:

"The commission is fully cognizant of and sympathetic with the economic dislocations that frequently result from technological advances. But as a regulatory body established for the purpose of insuring adequate utility services to the consuming public, this commission cannot afford to mold its policies and decisions in such a way as to afford special protection to vested interests at the expense of technological progress and the public good."

Stallard Is Manager of Valley Pipe Line Co.

Neil Stallard, an official of W. R. Davis, Inc., has been named manager of the Valley Pipe Line Co., which transports crude oil from a score of lower Rio Grande Valley oil fields to the deep-water ports of Port Isabel and Port Brownsville, Tex.

Mr. Stallard succeeded H. H. Hensley, manager of the line since its construction in 1935. Mr. Stallard also became manager of the W. R. Davis, Inc., oil terminal and tank farm at Port Brownsville, succeeding Joe Stead, terminal manager since its construction 2 years ago.

Mr. Stallard verified recent reports that Continental Oil Co. had purchased a half interest in the pipe-line and terminal facilities from the Davis firm. Their operations will be continued under Davis management. Mr. Stallard came to McAllen from Texon, Tex., where he was a Continental pipe-line superintendent.

Magnolia Opens Terminal Near Oklahoma City

Magnolia Petroleum Co. is placing in operation its gasoline pipe-line terminal at Red Horse, near Oklahoma City, Okla., this week, according to an announcement by J. L. Green, district manager.

This marks completion of the 200-mile 4½-in. pipe line from the company's refinery near Fort Worth, Tex., to Oklahoma City.

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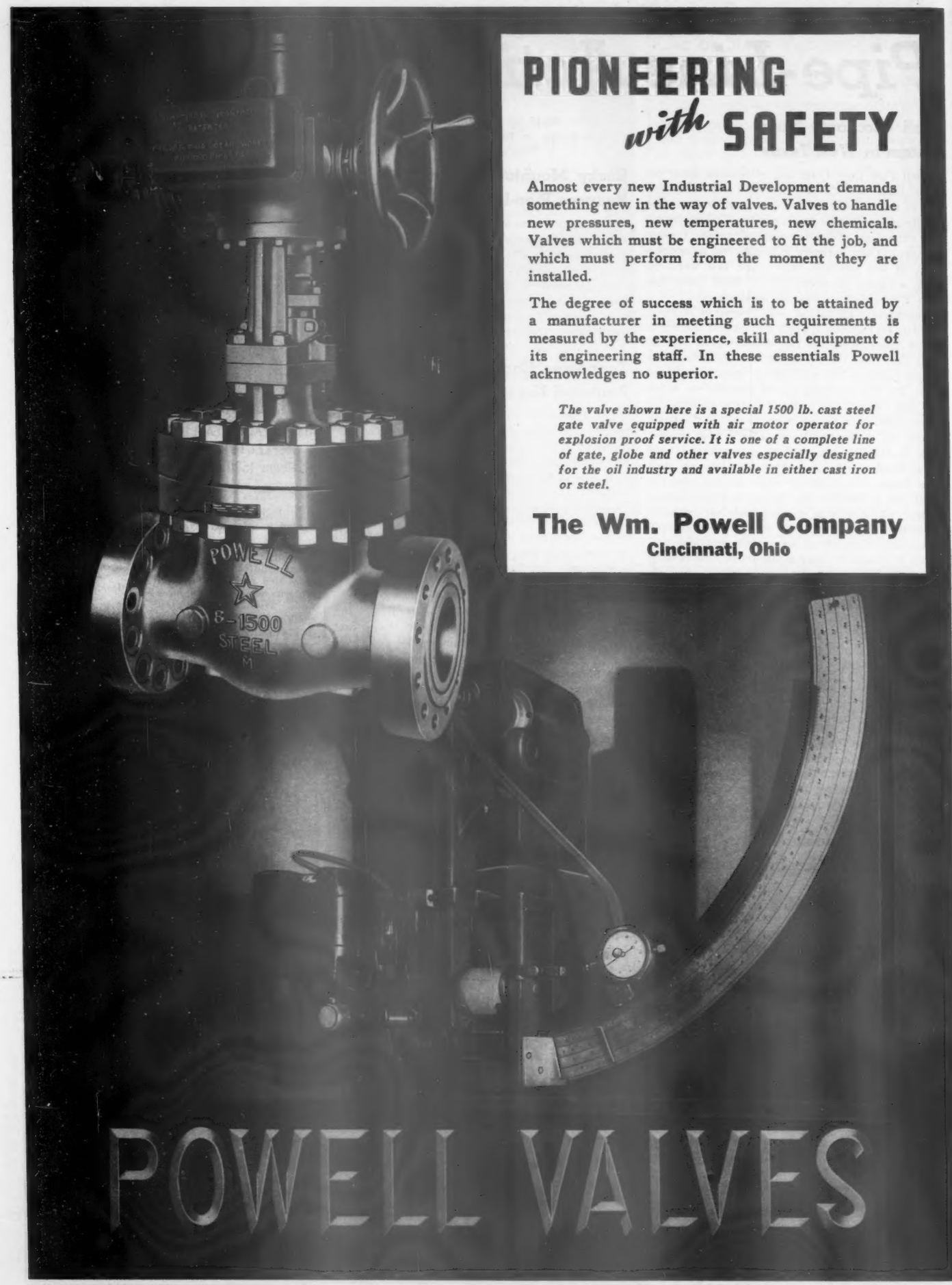

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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

Completions dropped slightly during the past week, 687 being reported compared with 697 the previous week. Oil wells were down 43, gas wells up 6 and dry holes up 27. Compared with the corresponding week of 1940, completions were up 107.

Interest in the Wilcox trend play continues strong in both Louisiana and the upper Gulf Coast area of Texas. The great thickness of the sandy section and the fact that oil may be expected as much in the lower part of the formation as in the upper is leading to many deep tests, including the deepest yet drilled in coastal Texas. In recent weeks, the shoreward extent of the play has also increased following tests in Calcasieu Parish, Louisiana. Now the chain of recently discovered pools in La Salle Parish has been extended into Catahoula Parish and the leaser is ranging into Mississippi assembling blocks for Wilcox tests.

The ultimate linking of the Sand Hills area in Crane County, Texas, with the Abell field in Pecos County is still a matter for speculation, but chances appear brighter as a result of showings in the Simpson south of the Sand Hills extension. There is a saddle between the two fields which may fall below the water level. As in other districts, however, the deep Ordovician structures may be larger and more continuous than the shallower producing spots.

ILLINOIS: A test heading for the Trenton and St. Peter at Louden is down some 2,000 ft. Louden's position as Illinois' second largest producer is threatened by the Johnsonville pool in Wayne County which is now making 59,000 bbl. An outpost west of the North Benton pool opener is finding markers high (p. 59).

CALIFORNIA: More than 300 ft. of oil sand has been cored in a test on the Pico anticline in the Newhall district. The third well completed in Raisin City greatly increased the possibilities of the new field. An east outpost in Kettleman Hills is making a test of a sand found in the Cretaceous (p. 64).

ARKANSAS: Tide Water's discovery west of McKamie is showing better on later tests and the water content is dropping fast (p. 62).

NORTH LOUISIANA: The Wilcox trend play is spreading southward and eastward and leasing has extended into Mississippi (p. 62).

WYOMING: A fault block at the crest of the Frannie structure has been proved for production in the Tensleep (p. 80).

MICHIGAN: With 40 producers in the field, the first dry hole, limiting production in Reed City on the northeast, has been abandoned. Roscommon may again enter the list of producing counties as a result of showings found in the Monroe (p. 68).

NEW MEXICO: Wildcats appear to have a good chance of developing pools south of Corbin and north of Vacuum (p. 70).

INDIANA: A new Bridgeport sand pool has been opened up in Gibson County (p. 78).

WEST VIRGINIA: With a 400-bbl. well in the Big lime in the Poca district of Kanawha County, parts of the big Oriskany gas field may see considerable shallow drilling (p. 63).

OKLAHOMA: After flowing 200 bbl. an hour from the Simpson sand, the third well in the Apache pool is nearing completion as the best well drilled in the state for several weeks. Three wildcat tests are now drilling on the Apache trend. Interest is rapidly dying in Logan County as the prospects for a new Guthrie townsite field fade with additional drilling of a closely watched wildcat in that area (p. 57).

KANSAS: Testing of possible discovery wells is under way in five counties and a recently completed wildcat test is expected to link the Trapp and West Trapp fields. The McLouth field has been extended ¾ mile south and may lead to townsite development at McLouth (p. 60).

EAST TEXAS: A wildcat near Groesbeck is preparing to test a show in the Pettit lime. A test south of Willow Springs yielded good gas production and an outpost in the Pleasant Grove area of Rusk County is running higher than the discovery (p. 69).

SOUTHWEST TEXAS: Frio-Vicksburg production has been opened southeast of the Rincon field. The old Palo Blanco dome in Brooks County is being retested with good prospects of finding production. Past production has been gas. The recently opened new sand at Midway has been extended. The Georgetown is showing oil in a test in the Chittim gas field, Maverick County (p. 56).

LOUISIANA GULF COAST: Oil sand has been logged in a south outpost of the Unknown Pass pool. A flank test which encountered water and was then whipstocked into oil production has definitely fixed the water table on the east flank of Pine Prairie (p. 72).

NORTH TEXAS: A prospective pool opener 6 miles north of Bowie in Montague County is making oil from the conglomerate (p. 75).

WEST CENTRAL TEXAS: A wildcat in Jones County reports showings in the Swastika sand and one in Coleman County is testing the Gray sand (p. 75).

SOUTHWEST PENNSYLVANIA: A deep test on the Kellersburg anticline found the Oriskany absent, thus further limiting the possible producing area for that formation (p. 63).

TEXAS GULF COAST: Gas-distillate production from the Frio was assured for the Needville prospect in Fort Bend County which also had showings in the Marginulina zone. Other important Wilcox developments include preparations to test the McCarthy wildcat in Montgomery County, the record depth reached by Superior's Lake Creek well in its efforts to penetrate the entire Wilcox section, showings in the Oswego test in Grimes County and in Gulf's deep test at Segno (p. 83).

WEST TEXAS: Between Abell and the Sand Hills extension a wildcat is showing oil in the Simpson. Abell produces mainly from the Simpson while Sand Hills is an Ellenburger field. The largest wells in the Foster and Spencer pools were completed last week. Wildcats in Dawson and Yoakum counties were reported running high, while a test in Mitchell County is showing oil from a lime pay (p. 70).

COMPLETIONS IN ALL FIELDS . . .

(Week Ended September 27, 1941)

	Oil	Gas	Dry	Total	1941 total comp. to date	1940 total comp. to date
N. Y., Pa., and W. Va.	95	18	2	115	4,367	4,160
Ohio	4	16	13	33	1,226	1,134
Indiana	1	0	3	4	369	301
Kentucky	6	3	7	16	486	427
Illinois	81	0	20	101	2,644	2,860
Michigan	14	3	12	29	651	847
Kansas	34	5	14	53	1,636	1,367
Nebraska	2	0	1	3	72	32
Missouri, Iowa	0	0	2	2	28	26
Oklahoma	19	1	13	33	1,411	1,396
Texas:						
North Central Texas	42	1	23	66	2,011	2,065
West Texas	53	0	7	60	1,669	1,451
Texas Panhandle	16	2	0	18	485	434
Eastern Texas	15	0	7	22	798	446
Texas Gulf Coast	13	2	6	21	819	899
Southwest Texas	25	3	12	40	1,372	1,631
Total Texas	164	8	55	227	7,154	6,926
North Louisiana	13	1	4	18	538	457
Louisiana Gulf Coast	8	0	5	13	655	768
Total Louisiana	21	1	9	31	1,193	1,225
Arkansas	2	0	1	3	137	127
Mississippi and Southeast	6	1	1	8	193	158
Montana	3	0	1	4	211	171
Wyoming	2	0	1	3	144	123
Colorado	0	0	0	0	25	12
New Mexico	3	2	1	6	211	488
California	12	0	4	16	825	771
Total United States	459	58	160	687	22,983	22,551
Total previous week	512	52	133	697		
Week ended Sept. 28, 1940	395	58	127	580		

Frio-Vicksburg Production Opened Near Rincon

By F. L. SINGLETON

CORPUS CHRISTI, Tex., Sept. 29.—The discovery of a new Frio-Vicksburg field in southern Starr County, testing of an important well in the old Palo Blanco area, Brooks County, and the opening of deep-sand production, 1½ miles northeast of the Luby field, Nueces County, highlighted developments in the Southwest Texas district the past week.

Frio-Vicksburg sand production was opened 7½ miles southeast of the Rincon field in southern Starr County as Sun 1 Yturria Land & Livestock Co., showed for a producer while testing through perforated casing. Total depth of the hole is 4,889 ft., and on a 10-hour gage flowing through a 7/64-in. choke, the well flowed 8 bbl. of 36.3-gravity oil. Tubing pressure was 1,450 lb., and shut-in casing pressure 1,720 lb. Gas-oil ratio was 16,800 to 1. After making the test, the perforations at 4,230-31½ ft. were squeezed off, and the casing was reperforated at 4,232-33 ft. where it flowed 15 bbl. of oil and 9 bbl. of salt water in 19½ hours through a 7/64-in. choke. Tubing pressure was 1,225 lb. and casing pressure 1,600 lb. The gas-oil ratio was 16,000 to 1. The well is situated in the Ygnacio Trevino Porcion 100, midway between the Rincon and Sam Fordyce fields.

To Test Shallow Sand Near Buena Vista

In the same county, and located in the H.&G.N. Survey, 4 miles south of Buena Vista, F. A. Gillespie was preparing to retest 1 V. G. Guerra after the well showed salt water when tested through perforated casing at 1,320-25 ft. Total depth of the hole is 2,516 ft., and sidewall cores are reported to have showed possible production in another sand at 800 ft.

Palo Blanco Dome Being Retested

Standard Oil Co. of Texas 1 H. J. Hocker, located in the old Palo Blanco field, Brooks County, was being watched with considerable interest as preparations were being made to test. Total depth of the hole is 5,510 ft., with 7-in. casing cemented at 5,506 ft. The well topped the Jackson at 4,656 ft., Hockleyensis at 4,866 ft., and the first showings of oil and gas were logged in a sand and shale section at approximately 5,130-40 ft. Six feet of gray sand with a good oil odor was recovered in a core at 5,240-46 ft., and this section appears to be the best sand. Correlated with Magnolia 1 Denman, a dry hole, the well is 156 ft. structurally higher on the Jackson, and 402 ft. higher on the Hockleyensis.

Palo Blanco is believed to be a deep-seated domal type of structure. It was found in 1929 when gas production was opened by Houston Oil Co. et al 1 Lassiter, completed as a gas well at approximately 4,100 ft. Thus far the field has been classified as a gas field, although some oil was produced for a short period. The present well is the first to be drilled on the structure in several years, and any production developed below 5,100 ft. would open a new sand for the structure.

Northeast Luby Outpost Flowing

George B. Buescher et al 1 J. T. Gillette, 1½ miles northeast of the Luby field, Nueces County, is flowing at the rate of 148 bbl. of 39.8-gravity oil daily through a ⅛-in. choke. Tubing pressure was 1,275 lb., and casing pressure 1,425 lb. The flow is free of salt water. Total depth of the well is 7,314 ft., and production is from perforated casing opposite the Frio sand at 7,308-12 ft. Leasing and royalty buying in the area has been extremely active during the past 2 weeks. An 80-acre lease offsetting the well to the northwest was sold for $250 an acre cash and $750 per acre in oil payments, while royalty is being offered at $200 and higher.

Wildcat Activity

Jim Wells County gained a new wildcat operation as H. J. Porter et al staked location for a 5,200-ft. test on the John Baca lease in the J. Reynolds Survey, Section 116, Block 72 of the A. J. Ander Farm Lots subdivision. The well is being drilled on a farmout from the Arkansas Fuel Oil Co. Southeast of Odem in San Patricio County, L. A. Douglas et al staked location for 1 Odem estate, a 7,200-ft. test, located in Block 22 of the J. H. Drummond subdivision. The location is about 1¼ miles west of the nearest gas production in the old White Point gas field.

In Bee County, Masterson and Swiger of Corpus Christi have turned their block on the McKinney ranch to Fred Shield who is scheduled to drill a 4,500-ft. test in the L. D. Randolph Survey. Arkansas Fuel Oil Co., Stanolind Oil & Gas Co., and Humble Oil & Refining Co. hold considerable protection in the area.

In Duval County, Trinity Gas Corp. is making preparation to test 2 Jack Casey located about 1 mile west of the Sejita gas-distillate field. Total depth of the hole is 5,887 ft., and 5½-in. casing was cemented on bottom preparatory to testing at intervals from 5,700-5,850 ft. The well correlated 300 ft. lower than Standard Oil Co. of Texas 1 Casey, the discovery well, and promise of opening oil production from downdip sands are encouraging.

New Sand at Midway Extended

On extension of several hundred feet west was recorded for the recently opened new sand in the Midway field, San Patricio County. The extension was made by Pan American 1 Ora L. Smith, completed through perforated casing at 6,262-66 ft. for an initial production of 141 bbl. in 15 hours, flowing through a ⅛-in. choke. This is the second well to be completed in the new sand.

Maverick County Wildcat Showing Oil

Along the Balcones fault line, interest was centered on Wellington Oil Co. et al 2 Chittim ranch located in the Chittim field, Maverick County. A show of free oil was encountered in the Georgetown lime at 3,242 ft., and brown lime with an oil odor was cored at 3,248-53 ft. A drill-stem test recovered several hundred feet of oily mud, and the well is drilling ahead to the Edwards lime. The Austin chalk was topped at 1,040 ft., Buda lime at 2,467 ft., soft Georgetown lime at 2,867 ft., and hard Georgetown lime at 2,886 ft. The field is located about 15 miles northeast of Eagle Pass. The structure was discovered in 1929 when gas and some high-gravity oil was produced from the Glen Rose at 5,500 ft. Thus far development has been disappointing although favorable showings of oil and gas logged in the Edwards and Buda lime sections provide an incentive for the continuation of exploration.

SUMMARY OF COMPLETIONS

Lower Gulf Coast District

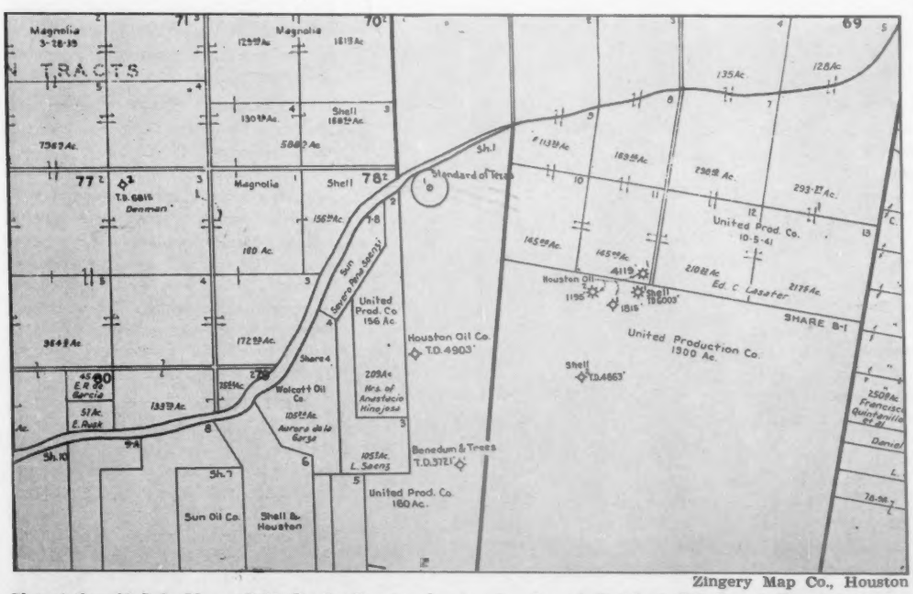
	No.	Bbl.	Footage
Oil wells: Fields	11	1,911	64,812
Gas wells: Fields	1	.....	5,309
Dry holes: Fields	1	.....	6,498
Wildcats	2	.....	11,833
Total	15	.....	88,452

Laredo District

	No.	Bbl.	Footage
Oil wells: Fields	13	1,582	40,719
Gas wells: Fields	2	.....	6,050
Dry holes: Fields	2	.....	5,526
Wildcats	3	.....	11,464
Total	20	.....	63,759

South Central Texas District

	No.	Bbl.	Footage
Oil wells: Fields	1	.....	512
Dry holes: Fields	2	.....	5,181
Wildcats	2	.....	7,380
Total	5	.....	13,073



Zingery Map Co., Houston

Plat of the old Palo Blanco field, Brooks County, showing location of Standard Oil Co. of Texas 1 Hocker which may revive development on this old structure

SOUTHWEST TEXAS COMPLETIONS

LOWER GULF COAST

Wildcats

Jim Wells County: O. W. Killam 1 Rehmet, dry, T.D. 5,324 ft.

Nueces County: Southern Minerals 1 Bartel, dry, T.D. 6,509 ft.

Fields

Agua Dulce, Nueces County: Texon Royalty 3 Horne, 235 bbl., ⅛-in. choke, perf. casing 7,015-32 ft., T.D. 7,035 ft.

Fagan, Refugio County: P. R. Rutherford 1-C Fagan, 135 bbl., ⅛-in. choke, perf. casing 5,637-40 ft., T.D. 5,653 ft.

Heard, Bee County: Heyser, Heard & Clardy 1 C. E. Heard, 12,000,000 cu. ft. gas, ⅛-in. choke, perf. casing 4,764-67 ft., T.D. 5,309 ft.

Heyser, Victoria County: Humble et al 9 Vandenberge, 98 bbl., 7/64-in. choke, sand 5,450-87 ft.

Midway, San Patricio County: W. F. Morgan 3 Schmidt, 93 bbl. oil, 53 bbl. salt water, ⅛-in. choke, perf. casing 5,338-42 ft., T.D. 5,350 ft.

Pan American 1 Ora L. Smith, 141 bbl., 15 hr., ⅛-in. choke, perf. casing 6,262-66 ft., T.D. 6,510 ft.

Minnie Bock, Nueces County: Graham 4 Dugger, 76 bbl., ⅛-in. choke, perf. casing 3,800-04 ft., T.D. 3,836 ft.

Refugio County: Hewitt & Dougherty 2 Reilly, temporarily abandoned, T.D. 6,498 ft.

Richard King, Nueces County: Southern Minerals 14 Walker, 83 bbl., 7/64-in. choke, perf. casing 5,644½-47 ft.

Seeligson, Jim Wells County: Magnolia 20 Seeligson, 160 bbl., ⅛-in. choke, perf. casing 6,078-80 ft., T.D. 6,083 ft.

Stratton, Nueces County: Chicago Corp. 25 Wardner 119 bbl., ⅛-in. choke, perf. casing 6,395-6,400 ft., T.D. 6,615 ft.

(Continued on Page 60)

Apache Trend Play Expands As 5,000-Bbl. Well Comes In

By ROBERT INGRAM

DRILLING in and near the Apache pool, Caddo County, was spurred last week when the third producer in the new pool came in for 200 bbl. per hour of oil from the Simpson sand. It was Texas 3 Smith, SW SE NW 2-5-12w, rated as the best well brought in in Oklahoma in many a day. Its production was more than twice that of either of the other two wells, the Texas 2 Smith, discovery, which made 1,500 bbl. a day, and Sinclair Prairie 1 Lewis, which flowed about 67 bbl. an hour. Completion of the 3 Smith was held up because of delays in building a pipe line to the town of Apache, but performance of the well before lease tankage was filled established the new field as of first rank importance.

Meantime the Texas Co. was building an 80,000-bbl. steel storage tank ½ mile south of the town of Apache and laid plans for a pump station at the site. It was building a loading rack near the railroad station at Apache and the 6-in. pipe line from the field to the loading rack was expected to be finished late this week. When the field was opened early this summer it was reported the Texas Pipe Line Co. would construct a 6-in. line from the field to the Cement field, thence either to the Greater Seminole district or to Oklahoma City and it is understood this outlet will extend from the pump station and tank now under construction.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	15	2,197	47,165
Wildcats	4	154	11,054
Gas wells: Fields	1	*1.5	1,982
Dry holes: Fields	5	.....	11,265
Wildcats	8	.....	23,378
Total	33	.....	94,844
Recompletions	7	1,143	.....

*Million cu. ft.

The town of Apache reported that 65 new families had already arrived to make their homes and housing accommodations were said to be scarce. When 15 employes of the Denver Producing & Refining Co. moved in last week to start 1 Luella Hayes, NE NE SW 14-4-11w, a wildcat northwest of Elgin on the Apache trend in Comanche County, living quarters were hard to find. Townsfolk said the big upsurge in business came immediately after the Texas 3 Smith was completed.

Next well to reach the sand at Apache will be Texas 4 Smith, NE NW NW 2-5-12w, which was drilling at 3,314 ft. Texas 1 Maynahonah, SW SW NE 2-5-12w, was drilling at 3,200 ft.; Texas 1 Mulkahay, SW NW SE 2-5-12w, drilled to 800 ft. and set surface pipe, and Texas 2 Mulkahay was rigging up.

Sinclair Prairie 2 Lewis, NE SE SW 2-5-12w, had the derrick up and pits were dug for Sinclair Prairie 3 Lewis, SW NE SW 2-5-12w.

Besides the Denver Producing & Refining Co. wildcat, Texas 1 School land B, SW SW SW 13-4-11w; Texas 1 School land, SW SE NW 13-3-10w, and Texas 1 Gamble, SW NE SE 5-3-10w, were drilling on the Apache trend which runs northwesterly for nearly 40 miles from Township 3n-10w, to the vicinity of Carnegie. And at a sale held by the state School Land Commission of tracts in Comanche County, the Texas Co. paid $1,709.60 for the E½ NW 16-3-10w; the same price for W½ NW 16-3-10w, and $1,309.60 for the W½ NW 16-4-10w, top prices. Other 80-acre tracts in the same area brought from $300 to $347.

Guthrie Wildcat Believed to Be in Second Wilcox With No Show

Prospect of a new oil field on the Guthrie townsite in Logan County was considerably lessened last week. Harry A. Miller 1 Katschor, N½ NE SW 7-16-2w, which started a lease trading spurt when it was found running high compared to a nearby dry hole, still had no production early this week and was believed to be drilling in the second Wilcox sand at 5,810 ft. with no show of oil. The formation was very hard and cuttings showed an unusual amount of dolomite and broken sand. There was some opinion that the well found the top of the second Wilcox at 5,781 ft., but this was not certain. Crews continued drilling ahead slowly, but interest had pretty much died out.

Hotulke District Leads Activity In Greater Seminole Area

Chief interest in the Greater Seminole district was centered in the Hotulke and West Hotulke areas of Pottawatomie County. Several wells were waiting on production tests, while several were nearing the stage to determine whether they will fill the link between the two sectors.

Atlantic Refining 2 Higbee, SE SW SW 22-9-4, at West Hotulke, was waiting on cement with 5½-in. pipe set at 4,461 ft., total depth 4,671 ft. in second Wilcox sand, where it showed for a producer.

Ohio 1 Bearse, SE SW SE 21-9-4, had the second Wilcox dry at 4,756 ft., plugged back to the Viola to show for an oiler and was moving in pumping equipment.

Ohio 1 Billington, NW SW SE 22-9-4, was drilling near 1,200 ft. Sunray Oil and Smith Brothers Drilling 1 Galbreath, SW SW SW 23-9-4, was drilling below 4,255 ft.

Stanolind and Amerada 2 Billington-C, SE SE NE 26-9-4, perforated in the Hunton lime at 4,146-71 ft. with 150 shots and did 15 bbl. of oil in 8 hours; to acidize; pipe was set at 4,375 ft., total depth 4,412 ft.

Wood Oil 1 Webber, NW NW 26-9-4, was drilling below 2,340 ft. Alma Oil 2 White, NE NE 24-9-4, was drilling at 2,756 ft.

Sun Oil 1 Keesinger, in NW NW SW 25-9-4, had Sylvan at 4,230 ft., the Viola at 4,330 ft. and was drilling near 4,400 ft.

OKLAHOMA COMPLETIONS

Wildcats

Logan County: Sunray 1 McLeod, NE NE SE 12-17-2w, pumped 120 bbl., Bartlesville 5,109-23 ft., Wilcox 5,494-98 ft. dry, T.D. 5,505 ft., *opens new sand in Guthrie pool.*

Osage County: Anderson-Prichard and Berry Brothers 1-A Osage, SW NE SW 32-28-8, pumped 13 bbl., Mississippian lime 2,473-2,544 ft., T.D. 2,544 ft., P.B. 2,535 ft., *opens new pool.*

Swartz 3-A Osage, SW SW NE 16-23-9, pumped 6 bbl., Bartlesville 2,156-70 ft., 6-in. 1,589 ft., T.D. 2,170 ft., *opens new pool.*

Pontotoc County: Love 1 Newlund, SW NW NE 15-4-6, pumped 15 bbl., sand 803-35 ft., T.D. 835 ft., *opens new pool.*

Atoka County: S. J. Campbell 1-A Rich, SE SW 2-1-12, dry, T.D. 619 ft.

Jefferson County: Gibson 1 Sibbey Noah, NW NE 25-3s-5w, dry, T.D. 3,395 ft., Arbuckle detrital 2,945-3,395 ft.

Logan County: Newman 1 Anderson, SW SW NE 28-15-1, dry, T.D. 84 ft.

Muskogee County: Vierson 1 Finkles, SW NW 16-11-19, dry, T.D. 963 ft., sand 932-52 ft.

Okmulgee County: Oklahoma Oil 1 Colbert, SE SE 26-11-13, dry, T.D. 2,887 ft., Cromwell 2,812 ft.

Payne County: Atlantic 1 O'Hara, W½ NE NW 18-17-2, dry, T.D. 4,978 ft., Wilcox 4,972-78 ft.

Pottawatomie County: Amerada Stanolind 1 Rowan, NE NW SW 20-9-4, dry, T.D. 5,162 ft., second Wilcox 5,125 ft.

Meyers 1 Johnson, NE SE NE 34-10-3, dry, T.D. 5,308 ft., Wilcox 5,290 ft.

Fields

North Bebee, Pottawatomie County: Culver 4 Waite, SW SW NE 9-5-5, pumped 10 bbl., Hunton 2,508-20 ft. and Viola 2,647-2,709 ft., T.D. 2,709 ft.

Cement, Caddo County: Pace 6 Davis, NW SW NW 6-5-9w, pumped 240 bbl., sand 3,400-27 ft., T.D. 3,427 ft.

Cumberland, Marshall County: Pure 9 Little-106, SW NE SW 27-5s-7e, flowed 218 bbl., first sand 4,959 ft., second sand 5,056 ft., 7-in. 4,957 ft., T.D. 5,058 ft.

Pure 1 Little-211, SW NW NE 34-5s-7e, flowed 183 bbl., first sand 4,878 ft., second sand 4,956 ft., 7-in. 4,872 ft., T.D. 5,066 ft.

Dill, Okfuskee County: Portable 1 Dill, NE NE NE 12-11-8, dry, T.D. 4,132 ft., Viola 4,097 ft.

West Earlsboro, Pottawatomie County: Stanolind-Amerada 2 Billington-C, flowed 243 bbl. pinched, Hunton 4,146-71 ft., 5-in. 4,357 ft., T.D. 4,412 ft.

Empire, Stephens County: Pace 1 Marx-B, NW NE SE 13-2s-8w, pumped 7 bbl. oil and 30 bbl. water, sand 1,970-80 ft., T.D. 1,980 ft.

Guthrie, Logan County: McBride 4 Eastwood, SW NW SW 7-17-1w, pumped 40 bbl. oil and 100 bbl. water, Wilcox 5,489-95 ft., 7-in. 5,435 ft., T.D. 5,495 ft.

West Seminole, Seminole County: Amerada 2 Vulgamore, N½ SW SE 30-9-6, pumped 64 bbl. oil and 8 bbl. water, Wilcox 4,270 ft., 5-in. 4,170 ft., T.D. 4,287 ft.

St. Louis, Pottawatomie County: Sinclair Prairie 2 Rice B, SE NE NE 17-7-4, swabbed 1,006 bbl., Wilcox 4,213-15 ft., 7-in. 4,206 ft., T.D. 4,215 ft.

Tussy, Garvin County: Skelly 3 Partons, NW SW SW 28-1-3w, pumped 24 bbl., sand 1,813-1,926 ft., 7-in. 1,800 ft., T.D. 2,080 ft.

Weleetka, Okfuskee County: Fleming 1-A Robinson, SW NE SW 1-10-11, dry, T.D. 1,710 ft., sand 1,005 ft., show gas.

Miscellaneous

Creek County: Sinclair Prairie 28 Berryhill, NW SE NW 16-17-12, pumped 15 bbl., Glenn sand 1,395-1,550 ft., 2-in. 1,548 ft., T.D. 1,550 ft.

Latimer County: Le Flore 44 Gallagher, SE SE SE 11-6-21, gaged 1,500,000 cu. ft. gas, sand 1,548-1,839 ft., 8⅝-in. 365 ft., T.D. 1,982 ft.

Muskogee County: McNutt & Young 1 Tabor, SW SE SW 36-13-16, dry, T.D. 2,190 ft., sand 1,908-17 ft.

Simmons 1 Jackson, SW SW SW 8-14-16, dry, T.D. 1,832 ft., sand 1,815-32 ft., show gas.

Okmulgee County: Wood Oil 1 McAdoo, NE SE NE 28-13-13, pumped 40 bbl., Red Fork 1,724-49 ft., shot, T.D. 1,749 ft.

Dodge 21 Payne, SE SW SE 17-15-14, pumped 4 bbl., sand 800-36 ft., shot, T.D. 836 ft.

Osage County: Penny 8 Osage, N½ N½ SE 15-24-8, pumped 60 bbl., Mississippian chat 2,239-2,300 ft., 6-in. 1,976 ft., T.D. 2,300 ft.

Oliphant 4 Osage, NW SE NW 11-24-10, pumped 43 bbl., Bartlesville 1,785-2,001 ft., 6-in. 1,825 ft., T.D. 2,001 ft.

Kerr & McCrabb 2 Osage, NE NE NE 4-27-12, dry, T.D. 1,401 ft. in limy shale, missed Bartlesville.

Recompletions

Cement, Caddo County: Ohio 17 Pau-Kune, N½ SW SE 3-5-9w, pumped 535 bbl. oil and 65 bbl. water, sand 3,340-98 ft., old T.D. 3,929 ft., P.B. 3,442 ft.

East Wetumka, Hughes County: Phillaine 1 Morrison, NE SE SW 13-19-10, pumped 175 bbl., pay 3,795-3,810 ft., acid, old T.D. 4,214 ft., P.B. 4,036 ft.

Osage County: Peters 1 Osage, SE SE SE 10-22-10, pumped 10 bbl. oil and 20 bbl. water, Bartlesville 1,605-1,721 ft., old T.D. 1,721 ft., deepened to Arbuckle 2,146 ft., P.B. to Bartlesville.

Peters 1 Osage, NE NE NE 15-22-10, pumped 130 bbl., old T.D. 1,620 ft. in Bartlesville, deepened to base of sand at 1,668 ft., T.D. 1,673 ft.

Pawnee County: Major Oil 4 Moore, NE SW NE 12-20-7, pumped 100 bbl. (formerly made 35 bbl.), sand 2,623-34 ft., old T.D. 2,623 ft., T.D. 2,534 ft.

Keokuk, Seminole County: Carter 1 Canard, SE SE SE 35-11-6, pumped 78 bbl. oil and 100 bbl. water, Hunton 4,090-4,114 ft., old T.D. 4,483 ft., P.B. 4,081 ft., drilled out to 4,114 ft.

Tulsa County: Continental Oil & Gas 2 Key, SW NE NW 9-21-13, pumped 115 bbl., Tucker 1,284-1,304 ft., old T.D. 1,150 ft. in Bartlesville, T.D. 1,304 ft.

Input Wells

Glenn Pool, Creek County: Gulf 23 Vowell, NW NW SW 16-17-12, Glenn sand 1,420-72 ft., T.D. 1,472 ft., repressure well.

Sinclair Prairie 44 Kiefer, SW NW SE 17-17-12, T.D. 1,442 ft., repressure well.

Osage County: Barnsdall 2-W Osage, NE SE NW 30-21-9, sand 324-56 ft., T.D. 358 ft., water input.

WILDCAT DRILLING REPORT

Panhandle

Beaver County: T. R. Lofland 1 fee, W½ SE 13-6n-21ecm, 1,400 ft. water in hole at 3,170 ft.

Texas County: Peerless Oil & Gas 1 Hopkins, S½ NW NE 7-4n-18ecm, first report.

Southwestern

Bryan County: Sinclair Prairie 1 Irwin, SW SE SE 18-6s-12e, cored lime and shale, 36° dip, 1,265-75 ft., drilling 1,446 ft. in shale.

Caddo County: Amerada 1 Sprages, SE NW 11-8-12w, drilling 4,435 ft.

Carter County: Lloyd Sanders 1-A Harmon, NE SE SW 21-1s-2w, 4½-in. 290 ft., drilled out, est. 500,000 cu. ft. gas, S.D.

Comanche County: Texas 1 Gamble, SW NE SE 5-3-10w, sand show oil 1,901 ft., cored soft gray shale, 80° dip, 1,902-06 ft., sand 2,256-58 ft., cored gray shale 2,258-66 ft., drilling 2,290 ft.

Texas 1 State, SW SE NW 13-3-10w, Pontotoc 1,905 ft., drilling shale 3,096 ft.

Texas 1 School Land-B, SW SW 13-4-11w, T.D. 800 ft., first report.

Denver 1 Hayes, NE NE SW 14-4-11w, first report.

Garvin County: Ohio 1 Freeman, SE SE 14-1-1w, base Pontotoc 2,470 ft., drilling 3,105 ft.

Jackson County: Rhinehart & Donovan 1 Petzold, SE SE NE 20-3-20w, S.D. 3,530 ft.

Sanders 1 Gamble, SE SE 12-3-21w, drilling 1,640 ft.

Jefferson County: Seitz, Comegys & Seitz 1 Bound, SE SE NW 11-6s-6w, drilling 1,260 ft.

Kiowa County: Thomasson 1 Baker, NW NE NW 7-6-18w, drilling by tools 515 ft.

Stauffer 1 Mayo, NE NE NW 13-6-18w, drilling 860 ft.

B. G. Walrick 1 Wayne, NE SE SE 2-7-18w, lime 228-35 ft., 200 ft. sulfur water, drilling 265 ft.

Amerada 2 Boomer, NW SW NE 1-6-14w, T.D. 746 ft., P.B. 705 ft., acidized lime 691-700 ft., filled up 90 ft. with fresh water, stain oil, S.D.

Stephens County: Louis Sikes 1 Dibrell, SE SE SW 16-1-8w, dry sand 4,660-4,755 ft., drilling Hoxbar 4,760 ft.

Carl Carter 1 Peek, NE SE NE 1-3s-6w, gas sand 400-22 ft. and 426-36 ft., 8¼-in. 402 ft., drilled out, est. 5,000,000 cu. ft. gas.

North and Central

Creek County: Deep Rock 1 Lewis Meadvis, SE NW NE 16-15-7, S.D. 2,691 ft.

(Continued on Page 72)

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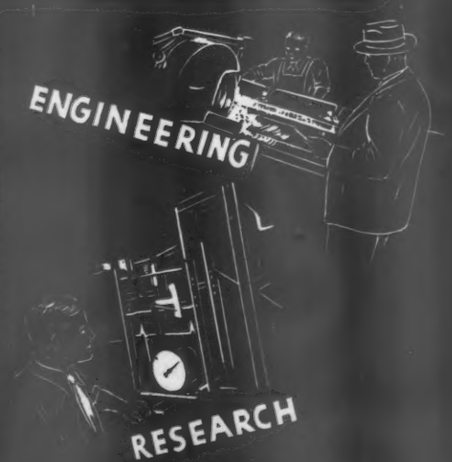


NORTON ABRASIVES

St. Peter Sand and Trenton Lime To Be Tested at Louden

By STAFF CORRESPONDENT

MATTOON, Ill., Sept. 29.—The possibilities of commercial production from the St. Peter sand in the Louden field of Fayette County may be determined within the next few weeks. Carter Oil 6 Jennie Bauer, SE 21-8n-3e, is drilling near 2,000 ft., destined to be the first well in the Louden field to penetrate the deep-lying formation. Company officials expect the formation at 5,500-6,000 ft. If this test is carried to the St. Peter, it will also pass through the Trenton lime which has not been tapped in that county but which is productive in other parts of the Illinois basin.

A number of tests have been drilled to the St. Peter in the basin but it has not yet yielded production. The St. Peter is very similar to the Wilcox sand which produces so prolifically in the Oklahoma fields, although it is geologically a little older.

To date the deepest known exploration in the Louden field is in the Devonian lime from 3.000-3.200 ft. Only a small area of the pool has Devonian production at the present time but two wells whose success would greatly expand the development are now drilling. These are Carter 3 Whetmore, 11-8n-3e, and Magnolia 41-D T. C. Clow, 5-7n-3e, 2 miles south of present Devonian production.

The 21,000-acre Louden field is the largest in extent in Illinois but has been second in production to th Salem field of Marion County. The rapidly growing Johnsonville pool of Wayne County, however, cha lenged this position last week with a production of 59,000 bbl. daily as compared to a 61,000-bbl. daily output for the Louden field. The Salem field remained on top with a daily production of 70,000 bbl. despite a steady decline since March 1940 when a production peak of 291,000 bbl. per day was reached during the height of the field's Devonian development.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Benton	6	1,412	12,860
Clay City	4	1,168	11,517
Dale	4	662	12,180
Johnsonville	5	5,514	15,865
New Harmony	9	1,265	25,032
North Boos	4	1,741	11,215
Parkersburg	2	2,434	6,265
Rural Hill	3	905	9,886
Woodlawn	17	6,779	33,519
Other pools	22	2,498	58,765
Wildcats	5	672	13,643
Dry holes: Fields*	7	.....	19,147
Wildcats	13	.....	27,795
Total	101	.....	257,689
Recompletions	1	58	.....

*Bridgeport 1, East Patoka 1, Eldorado 1, Hoodville 1, Johnsonville 1, Sailor Springs 1, Storms 1.

Franklin County Wildcat Nears Benoist Pay

With formations running as much as 20 ft. high, a very promising wildcat outpost of the Benton field of Franklin County was believed to be nearing Benoist pay at the end of the week. The well, McQuigg 1 Mack Uhles, NE SE NW 5-6s-2e, is about 3 miles west of the new North Benton pool which produces from the Benoist.

Starting at a surface elevation of 571 ft., the upper Glen Dean was topped at 2,265 ft. and the main Glen Dean at 2,303 ft. The Tar Springs, only producing formation in the Benton pool, carried about 70 ft. of broken saturation, but this tested water. Cypress was topped at 2,552 ft.

Royalty values are reported to have soared to $300 per acre in the vicinity of Oil Carriers 1 George Casper, SE SW NW 1-6s-2e, North Benton field discovery well. No. 1 Casper was the first well to be completed in the Benoist in Franklin County and is now producing 250 bbl. daily on pump from 2,604-23 ft.

To date 1 Casper has been pumping at 12 strokes per hour with pump set on a temporary foundation. The pump, however, is now being set on a permanent foundation and will make 28 strokes per hour. This is expected to increase production to nearly 500 bbl. a day.

Second Test in New Marion County Field Awaits Production Test

The most closely watched well in Marion County at the present time is Swan-King 2 Kotva heirs, SW SW NW 26-4n-2e, which, if successful, is to establish a new field. There has been no production from the well as yet, but operators anticipate recovery comparable to that from No. 1 Kotva heirs which has been yielding 200 bbl. a day since completion. Hopes of testing the well last week were destroyed when machinery broke down. Operators are now cleaning out about 15 ft. off bottom.

ILLINOIS COMPLETIONS

Wildcats

Bond County: Fox & Conray 2 Buchele, SE SW NW 11-4n-2w, dry at 1,389 ft., Glen Dean 948 ft., Hardinsburg 982 ft., Golconda 1,007 ft., Cypress 1,111 ft., Weller 1,155 ft., Benoist 1,233 ft., Benoist sand 1,238 ft.

Clay County: Rockhill 1 Duff, NW SW SW 20-3n-8e, pumped 107 bbl. oil and 12 bbl. water from Weller and Benoist, Benoist 2,874-96 ft., T.D. 2,909 ft., P.B. 2,890 ft., drilled out to 2,899 ft. *Extends Clay City pool 1 mi. northwest.*

C. Robinson 1 Ditter, SW NW SW 18-4n-8e, dry at 3,014 ft., West Franklin 680 ft., base Pennsylvanian 2,238 ft., Glen Dean 2,428 ft., Golconda 2,508 ft., Barlow 2,602 ft., Weller 2,666 ft., Paint Creek 2,794 ft., Benoist 2,810 ft., Renault 2,852 ft., Aux Vases 2,878 ft., Ste. Genevieve 2,933 ft., Rosiclare 2,958 ft., Fredonia 2,969 ft.

Williams 1 Keck, NE NE SW 35-4n-7e, pumped 57 bbl. oil and 116 bbl. water in 28 hr., 10-qt. shot 2,317-20 ft., Tar Springs 2,315 ft., T.D. 2,323 ft. *Extends Sailor Springs pool 1 mi. south.*

Clinton County: Ross et al 1 Boren, NE SE SE 15-1n-1w, dry at 1,456 ft., Benoist 1,442 ft., show oil and water.

P. Doran et al 1 Kell, SW SW NW 36-3n-2w, dry at 1,245 ft., Tar Springs 835 ft., Glen Dean 930 ft., Hardinsburg 965 ft., Golconda 985 ft., Barlow 1,062 ft., Weller 1,133 ft., Paint Creek 1,202 ft., Benoist 1,232 ft., Benoist sand 1,239 ft.

Lilly & Hutchings 1 Shepperd, SW SW NW 25-3n-2w, dry at 1,305 ft., Menard 793 ft., Glen Dean 962 ft., Hardinsburg 982 ft., Cypress 1,112 ft., Cypress sand 1,154 ft., Benoist 1,289 ft.

Gallatin County: N. V. Duncan 1 Greer, SE SE SE 35-7s-9e, dry at 3,042 ft., Tar Springs 2,240 ft., Glen Dean 2,316 ft., Renault 2,792 ft., Aux Vases 2,868 ft., Ste. Genevieve 2,873 ft.

Jackson County: Charles Mercer et al 1 P. Williams, NE NE NE 9-8s-1w, dry at 2,300 ft.

W. E. Skeels et al 1 P. Williams estate, NE NE SW 33-7s-1w, dry at 2,319 ft., Clore 1,285 ft., Palestine 1,327 ft., Menard 1,409 ft., Waltersburg 1,505 ft., Vienna 1,567 ft., Tar Springs 1,585 ft., Glen Dean 1,663 ft., Hardinsburg 1,692 ft., Golconda 1,753 ft., Barlow 1,896 ft., Cypress sand 1,909 ft., Paint Creek 1,981 ft., Benoist 2,035 ft., Renault 2,054 ft., Aux Vases 2,149 ft., Ste. Genevieve 2,196 ft., Rosiclare 2,207 ft.

Jefferson County: Carter I W. C. Williams, SE SE NE 21-1s-2e, pumped 24 bbl. oil and 150 bbl. water, 20-qt. shot 1,954-60 ft., 5-qt. shot 1,955-60 ft., 10-qt. shot 1,956-57 ft., 10-qt. shot 1,952-56 ft., Benoist 1,958 ft., T.D. 1,975 ft.

Johnson County: Harding & Harlowe 1 Roy McCuan, NE NW NE 26-11s-3e, dry at 708 ft.

Lawrence County: J. S. Young 1 Gerhart, S½ SE SE 20-4n-10w, dry at 1,700 ft., Benoist sand 1,410 ft., Renault 1,505 ft., Ste. Genevieve 1,525 ft.

Marion County: Swan-King 1 Kotva heirs, S½ SW NW 36-4n-2e, pumped 439 bbl. in 48 hr., 20-qt. shot 2,086-2,106 ft., Rosiclaire 2,070 ft., T.D. 3,692 ft., P.B. 2,113 ft. *Pool opener.*

Richland County: Anderson & Fields 1 Higgins, NE NE NW 35-2n-14w, dry at 3,023 ft., Menard 2,107 ft., Waltersburg sand 2,216 ft., Vienna 2,256 ft., Tar Springs 2,308 ft., Glean Dean 2,377 ft., Hardinsburg 2,397 ft., Golconda 2,473 ft., Barlow 2,570 ft., Benoist 2,713 ft., Renault 2,778 ft., Ste. Genevieve 2,881 ft., McClosky 2,918 ft., St. Louis 3,021 ft.

Wayne County: New Penn Dev. 1 Harris, W½ NE NW 31-2s-9e, dry at 3,385 ft., Menard 2,460 ft., Glen Dean 2,695 ft., Barlow 2,917 ft., Cypress 2,960 ft., Renault 3,203 ft., Aux Vases 3,226 ft. Ste. Genevieve, 3,280 ft., Rosiclare 3,302 ft., Fredonia 3,341 ft., McClosky 3,343 ft.

White County: Pure-Carter 1 Atchley Consol., SW SW SW 8-6s-9e, pumped 55 bbl. oil and 15 bbl. water, Paint Creek sand 2,802 ft., T.D. 2,835 ft.

Pure & Carter J. M. Neil, NE NE NE 18-6s-9e, pumped 97 bbl., Benoist 2,795-2,818 ft., T.D. 2,818 ft.

Fields

Allendale, Wabash County: Joe Young 2 Price, SW SW SW 36-2n-12w, pumped 15 bbl., 40-qt. shot 1,979-92 ft., Benoist 1,984 ft., T.D. 1,994 ft.

Adams Corner O. & G. 2 G. Adams, SE NE NW 16-1n-12w, pumped 100 bbl. oil and 25 bbl. water, 3,000 gal. acid, McClosky 2,280-90 ft., T.D. 2,293 ft.

Snowden & McSweeney 1 Cozino, NW NW NE 16-1n-12w, pumped 175 bbl., 3,000 gal. acid, McClosky 2,281-92 ft., T.D. 2,292 ft.

Barteiso, Clinton County: Newton & Ward 6 Gross, N½ SE SE SW 5-1n-3w, pumped 35 bbl., 20-qt. shot 982-95 ft., Cypress sand 975 ft., T.D. 995 ft.

Benton, Franklin County: J. M. McFarland 2 I.C.R.R., NW SE NE 23-6s-2e, pumped 75 bbl. oil and 25 bbl. water, 30-qt. shot 2,123-35 ft., Tar Springs 2,112 ft., T.D. 2,135 ft.

Pollock & Margrave 1 Jordon School, NE NE NW 23-6s-2e, pumped 15 bbl., 30-qt. shot 2,130-41 ft., Tar Springs 2,125 ft., T.D. 2,144 ft.

Adkins 8 C. W. and F. Coal, NW SE SE 25-6s-2e, pumped 210 bbl., 35-qt. shot 2,102-23 ft., Tar Springs 2,094 ft., T.D. 2,129 ft.

Blalock & Walters 1 Rice, NE SW NE 35-6s-2e, pumped 240 bbl., 35-qt. shot 2,094-2,122 ft., Tar Springs 2,088 ft., T.D. 2,122 ft.

Adkins 6 C. W. & F. "W," NW NE SW 36-6s-2e, pumped 576 bbl., 30-qt. shot 2,085-2,135 ft., Tar Springs 2,077 ft., T.D. 2,135 ft.

Shell 15 C. W. & F. "R-S," SW SE NW 36-6s-2e, pumped 296 bbl., 30-qt. shot 2,122-52 ft., Tar Springs 2,080 ft., T.D. 2,155 ft.

Bridgeport, Lawrence County: Big Four O. & G. 35 L. Gillespie, N½ SW SE 26-3n-12w, dry at 3,370 ft., Ste. Genevieve 1,802 ft., Osage 2,422 ft., Louisiana 2,516 ft., Chattanooga 2,930 ft., Kinderhook 2,965 ft., Devonian 3,143 ft.

Clay City, Clay County: Creagor 1 Henderson, NW SW NW 17-2n-8e, pumped 26 bbl. oil and 3 bbl. water, 20-qt. shot 2,662-70 ft., Cypress sand 2,649-60 ft., T.D. 2,675 ft., P.B. 2,670 ft.

Pure 2 Brissey "A," E½ SW NE 18-2n-8e, pumped 283 bbl., 5,000 gal. acid, Fredonia 2,985 ft., T.D. 3,083 ft.

Clay City, Wayne County: Pure 3 E. V. Chaffin "B," E½ SW NE 19-2n-8e, pumped 15 bbl. oil and 29 bbl. water, Cypress 2,657 ft., T.D. 2,685 ft.

Pure 1 W. S. Carson, E¼ SE NE 11-1n-7e, flowed 844 bbl., 5,000 gal. acid, McClosky 3,048-54 ft., T.D. 3,074 ft.

Dahlgren, Hamilton County: H. W. Bracev 1 R. Tennyson, SE SE SE 28-3s-5e, pumped 120 bbl., 5,000 gal. acid, McClosky 3,309-16 ft., T.D. 3,322 ft.

Dale, Hamilton County: Kingwood 7 Dodd, SE SW NW 6-6s-7e, flowed 324 bbl., 60-qt. shot 2,969-93 ft., Aux Vases 2,965 ft., T.D. 3.003 ft.

Shell 5 Beagle, SW SE SE 6-6s-7e, flowed 105 bbl., 10-qt. shot 2.883-90 ft., Aux Vases 2,954-81 ft., Benoist 2.868-90 ft. T.D. 3.001 ft., P.B. 2.902 ft.

Cameron 4 Kern, NW SW SW 7-6s-7e, pumped 150 bbl., 20-qt. shot 2,925-33 ft., Benoist 2,914-45 ft., T.D. 3.041 ft., P.B. 3.016 ft.

Pure 4 Fairweather "A," SW NW SW 7-6s-7e, flowed 83 bbl., 5,000 gal. acid, Aux Vases 3,007 ft., T.D. 3.135 ft.

East Patoka, Marion County: Beckman & Gordon 1 Thomas, NW SW SW 35-4n-1e, dry at 1,515 ft., Glen Dean 1,292 ft., Weller 1,394 ft., Benoist 1.502 ft.

Eldorado, Saline County: Thompson Drlg. 2 Reich, NW SW NE 8-8s-7e, dry at 2,594½ ft., base Pennsylvanian 1,625 ft., lower Kincaid 1,750 ft., Palestine 1.936 ft., Menard 1,975 ft., Tar Springs 2,213 ft., Glen Dean 2,242 ft., Cypress sand 2,539 ft.

Fairfield, Wayne County: Watkins & Weinert 1-B Rassbee, E½ SW SW 36-1s-7e, pumped 360 bbl., 4,000 gal. acid, perf. 3,314-20 ft., McClosky 3,314-17 ft., T.D. 3,343 ft.

Grayville West, White County: Wall & Mitchell 1 Thatcher heirs, NW NW SE 22-3s-10e, pumped 144 bbl., 2,000 gal. acid, reacidized 1,500 gal., McClosky 3,172-74 ft., 3,194-97 ft., 3,209-12 ft., T.D. 3,273 ft.

Griffin, White County: Longhorn 17 Helm, SW NW SE NW 23-3s-14w, pumped 150 bbl., 20-qt. shot 2,634-45 ft., Benoist 2,634-45 ft., T.D. 2,863 ft., P.B. 2,645 ft.

Longhorn 18 Helm, SW NE SE NW 23-3s-14w, pumped 125 bbl., 40-qt. shot 2,635-46 ft., Benoist 2,632-46 ft., T.D. 2,646 ft.

Hoodville, Hamilton County: N. V. Duncan 1 Davenport, NW NE SE 11-6s-6e, dry at 3,055 ft., Menard 2,205 ft., Tar Springs 2,388 ft., Glen Dean 2,446 ft., Golconda 2,582 ft., Barlow 2.701 ft., Cypress 2,706 ft., Paint Creek 2,918 ft., Benoist 2,949 ft., Aux Vases 3,033 ft.

Texas 2 E. Freeman, NE NW SE 11-6s-6e, pumped 160 bbl., 10-qt. shot 3,047-54 ft., T.D. 3,056 ft., P.B. 3,054 ft.

Texas 4 E. McDonald, SE SW NE 11-6s-6e, swabbed 50 bbl., 5-qt. shot 3,048-53 ft., Aux Vases 3,040 ft., T.D. 3,053 ft.

Irvington, Washington County: Ameriagene, Inc. 2 Erbes, NE NW SW 10-1s-1w, pumped 60 bbl., natural, Benoist 1,515 ft., T.D. 1,519¼ ft.

Johnsonville, Wayne County: Wiser 1 Matchett, NW NE SE 27-1n-6e, flowed 2,068 bbl., natural, perf. 3,066-75 ft., 3,087-94 ft., McClosky 3,066-75 ft., 3,087-94 ft., T.D. 3,114 ft.

Wiser 1-B Dickey, N½ SE SW 34-1n-6e, flowed 802 bbl. in 17 hr., McClosky 3,122-28 ft., 3,168-72 ft., 3,178-84 ft., T.D. 3,202 ft.

Jablonski 1 Bratton, S½ NW NE 35-1n-6e, flowed 2,400 bbl., natural, McClosky 3,143-44 ft., 3,149-59 ft., 3,165-70 ft., T.D. 3,170 ft.

Pioneer Drlg. et al 2 Williams, N½ SW NE 22-1n-6e, dry at 3,255 ft., McClosky 3,197-99 ft., 3,200-1 ft., 3,215-19 ft., 3,146-51 ft.

Texas 1 Greathouse, S½ SE NW 27-1n-6e, swabbed 69 bbl., 5,500 gal. acid, reacidized 8,000 gal., McClosky 3,013-17 ft., 3,020-24 ft., 3,033-37 ft., T.D. 3,094 ft.

Wiser Oil 1 Vaughn, E½ E½ NW NE 1-1s-6e, pumped 175 bbl., 5,000 gal. acid, perf. 3,192-3,20 ft., McClosky 3,192-3,202 ft., T.D. 3,285 ft.

Louden, Fayette County: Union Prod. Pet. 5-D A. Morrison, NW NW SW SW 8-7n-3e, pumped 17 bbl. oil and 5 bbl. water, Benoist 1,525-45 ft., Devonian 3,055 ft., T.D. 3,192 ft.

Carter 1-D M. Cummings, W½ NE NE 21-8n-3e, pumped 55 bbl. oil and 200 bbl. water, Devonian 3,074 ft., pay 3,175-3,200 ft., T.D. 3,200 ft.

Mason, Effingham County: Jones & Martin 1 Leith,

(Continued on Page 78)

Wildcats in Five Counties May Open New Pools

By ROBERT INGRAM

TESTING of possible discovery wells was under way last week in Rice, Barton, Graham, Pratt and Trego counties. In Rice County, Aladdin Petroleum Corp. 1 Glen Lackey, S½ SW SE 1-21-6w, topped Mississippian chat at 3,337 ft., had shows of oil beginning at 3,341 ft. and drilled to a total depth of 3,346 ft. before casing was set at 3,337 ft.

A new Viola lime pool was showing in northern Barber County at Deep Rock Oil Corp. 1 Skinner, W½ NW SW 21-31-14w, 4½ miles southwest of the Lake City field. It swabbed 25 bbl. of oil and 21 bbl. of water in 13 hours and 45 minutes from Viola topped at 4,531 ft. The test was made after acidization through casing perforations from 4,527-50 ft. Originally the well was drilled to a total depth of 4,780 ft. to the Arbuckle.

SUMMARY OF COMPLETIONS

Kansas

	No.	Bbl.	Footage
Oil wells: Fields	31	43,249	102,578
Wildcats	3	101	9,881
Gas wells: Fields	5	*48.05	7,056
Dry holes: Fields	8	.....	21,995
Wildcats	6	.....	18,207
Total	53	.....	159,717

Nebraska

	No.	Bbl.	Footage
Oil wells: Falls City	2	850	4,574
Dry holes: Wildcats	1	.....	3,306
Total	3	.....	7,880

Missouri

	No.	Bbl.	Footage
Dry holes: Wildcats	2	.....	1,595

*Million cu. ft.

The Graham County strike appeared at Cities Service 1 Montgomery, SE NW 7-8-23w, 1½ miles east of the Penokee pool, a fast-growing new area. The well filled 1,900 ft. with 39-gravity crude from Lansing-Kansas City lime through casing perforations at 3,725-55 ft.

In Pratt County, Central Petroleum Co. 1 Ward, SE NW 11-26-12w, swabbed 3 bbl. of oil and 10 bbl. of water an hour in a test of the Viola lime at 4,138 ft. The Ward is 7 miles northeast of the Iuka pool.

Helmerich & Payne 1 Schmidt, SE NW 22-20-15w, east of Pawnee Rock in Barton County, was making from 25 to 30 bbl. of oil a day through perforations in the Arbuckle from 3,688-91½ ft. after acid. Operators were planning to make more perforations and reacidize before completing the well.

And in Trego County, Aylward Production Co. and Barnett Drilling Co. 1 Schaefer, SW NE 10-12-21w, northwest of Gugler, was making 2½ bbl. of oil an hour from Arbuckle topped at 3,985 ft. This well had also been acidized and was being tested further.

Old Dry Hole Produces

Jones & Shelburne, Inc., of Oklahoma City, is doing salvage work in the Rick pool of Barton County, Kansas, and is making a producer out of a dry hole drilled in 1935.

Originally drilled as an Arbuckle test, the well was worked over opposite the Lansing lime and swabbed 239 bbl. of oil in 24 hours. After acidizing with 3,000 gal. the well flowed 61 bbl. of oil the first hour through 2-in. tubing.

McLouth Gas Field Extended West

Discovery of gas just west of McLouth, in Jefferson County, has extended the McLouth oil and gas pool approximately ¾ mile to the south, apparently taking in the town itself. Preparing for possible townsite drilling, McLouth has passed a law for 40-acre gas well spacing and 10-acre oil well spacing, the drilling to be communitized. In the same week Ray Anderson brought in the biggest well for the pool to date. His 1 Means produced 19,000,000 cu. ft. a day. The well at McLouth was 1 Van Druff, drilled by Ed Mosbacher. Joe Longwell and McLaughlin Sons, Inc., also had new gas wells during the week just ended.

New Well Expected to Join Trapp and West Trapp

Pool boundaries, already hard to distinguish in the huge Gorham-Hall-Gurney-Trapp area of southern Russell and northern Barton counties, appeared to be wiped out in another instance last week. Derby Oil Co. et al 1 Dietz, W½ NW NE 22-15-14w, a wildcat between the Trapp and West Trapp pools in Russell County, found production in the Arbuckle lime at a total depth of 3,254 ft. and was given an initial potential of 218 bbl. of oil a day. The well is expected to prove a link between the two areas.

KANSAS COMPLETIONS

Wildcats

Barton County: W. O. Allen 1 Stoskopf, NE NE NE 29-16-13w, pumped 35 bbl., 35-gravity, Arbuckle 3,373-75 ft., 5-in. 3,374 ft.
Lebow & Gussman 1 Schrepel, E½ NE SE 26-20-12w, dry, T.D. 3,425 ft.
Cowley County: Steinbuchel & Berger 1 Peck, NW NW SE 23-34-5e, dry, T.D. 3,010 ft., Mississippian 2,973 ft.
Marylyn 1 Mosier, NW NW SW 21-34-7e, dry, T.D. 2,710 ft., Kansas City lime 2,553 ft.
Ellis County: Imo Oil & Gas 1 Ginther, SW NE 35-11-18w, 16 bbl., Arbuckle, T.D. 3,588 ft., *opens North Walters pool.*
Elk County: Allison & Phillips 1 Porter, NW NE NW 25-28-8e, pumped 50 bbl., 33-gravity, Arbuckle 2,915-19 ft., 7-in. 2,915 ft., T.D. 2,919 ft., acid. *Pool opener.*
Marion County: Rex & Morris 1-A Cowman, S½ SE SW 12-17-4e, dry, T.D. 2,630 ft., Hunton 2,615 ft.
Pottawatomie County: E. V. Jackson 1 Chavanne, NE NE 3-10-10e, dry, T.D. 1,658 ft., Mississippian lime 1,595 ft.
Pratt County: Pryor & Lockhart 1 Bergner, NE NE NE 35-29-14w, dry, T.D. 4,774 ft., Arbuckle 4,670 ft.

Fields

Bemis, Ellis County: Cities Service 1 Slimmer, W½ SW NW 19-11-16w, 3,000 bbl., Arbuckle, T.D. 3,402 ft.
Big Creek, Russell County: Cities Service 2-C Mai, N½ SW SE 24-14-15w, 100 bbl., Arbuckle, T.D. 3,187 ft.
Eldorado Refining 1 Dewald, NE NW 1-15-15w, 207 bbl., Kansas City lime, T.D. 2,045 ft.
Brandt, Butler County: Adair & Morton 3-A Thomas, NW SW SE 10-28-7e, 374 bbl., Mississippian lime, T.D. 2,794 ft.
Burnett, Ellis County: Shell 3 Deane, NE NW NE 14-11-18w, 3,000 bbl., Arbuckle, T.D. 3,411 ft.
Dickey 7 Stein, E½ SE SE 7-11-17w, 3,000 bbl., Arbuckle, T.D. 3,374 ft., acid.
Burrton, Reno County: Nadel & Gussman 10 Tucker, W½ SE NW 19-24-4w, 162 bbl., Mississippian chat, acid, T.D. 3,391 ft.
Chase, Rice County: Lauck & Moncrief 1 Murphy, 22-19-9w, 78 bbl., Arbuckle, T.D. 3,233 ft.
Kiowa 1 Patterson, NW NE NW 23-19-9w, dry, T.D. 3,312 ft.
Douglas, Butler County: Plymate & Bornholt 5 Owens, NE NW NE 19-29-4e, dry, T.D. 1,953 ft.
Dubuque, Russell County: Skelly 1 Klusener-B, NW NW NE 34-15-12w, dry, T.D. 3,312 ft.
Florence, Marion County: Urschell 2 Urschell, N½ NW NW 21-21-5, dry, T.D. 2,276 ft.
Frog Hollow, Cowley County: Arthur Brewer 3 Miller, SW NW SW 16-22-5e, 45 bbl., Bartlesville, T.D. 3,098 ft.
Goodland, Sherman County: Ingling & Parker 2 Tompkins, E½ SE SW 18-8-39w, 50,000 cu. ft. gas, Goodland lime 1,008 ft., T.D. 1,005 ft.
Hall-Gurney, Russell County: Skelly 13 Colliver, S½ SE SE 28-14-13w, 490 bbl., Kansas City lime, acid, T.D. 2,455 ft.
Texas 4 Keil, 36-13-14w, 651 bbl., Kansas City lime, T.D. 2,950 ft.
Darby 3 Boxberger, W½ NW SE 22-14-14w, 2,940 bbl., Kansas City lime, acid, T.D. 3,086 ft.
Cities Service 4-B Strecker, S½ SE 36-14-14w, 408 bbl., Kansas City lime, T.D. 3,035 ft.
Keesling, Rice County: Luther Mackall 2 Mitchell, W½ SW SE 4-20-9w, 406 bbl., Arbuckle, T.D. 3,239½ ft.
Krier, Barton County: Skelly 1 Esfeld, W½ SE SE 30-16-11w, 3,000 bbl., Gorham, T.D. 3,326 ft.
McLouth, Jefferson County: Ed Mosbacher 1 Van Druff, NE NW 8-10-20e, 11,000,000 cu. ft. gas, Bartlesville 1,550 ft., T.D. 1,580 ft.
Ray Anderson 1 Means, SE NW 29-9s-20e, 19,000,000 cu. ft. gas, Bartlesville 1,432 ft., T.D. 1,453 ft.
Joe Longwell 1 Albert Brose, NE SE 32-9-20e, 3,000,000 cu. ft. gas, Bartlesville 1,498 ft., T.D. 1,518 ft.
McLaughlin 1 Bower, NW NE 5-10-20e, 15,000,000 cu. ft. gas, Bartlesville 1,480 ft., T.D. 1,500 ft.
Neal, Greenwood County: Gus Bisagno 1 Imthurn, S½ SE NE 31-25-13e, dry, T.D. 1,681 ft.
Otis, Rush County: Morgan-Flynn-Cobb 3 Crowell, SE SW NE 23-18-16w, 1,272 bbl., Reagan, T.D. 3,552 ft.
Pawnee Rock, Pawnee County Amerada 3 Bowyer, S½ NE SW 12-20-16w, 1,246 bbl., Arbuckle, T.D. 3,814 ft.
British American 1 Smith, S½ NW SW 12-20-16w, 410 bbl., Arbuckle, T.D. 3,821 ft.
Peace Creek, Reno County: Simpson 3 Snowbarger, NE SE NE 21-23-10w, 3,000 bbl., Viola, acid, T.D. 3,807 ft.
Cities Service 1-C Krele, NE SE 21-23-10w, 3,000 bbl., Viola, T.D. 3,797 ft.
Ray, Phillips County: Cities Service 2 Pinkerton, SW SW NE 31-5-20w, 974 bbl., Reagan, T.D. 3,628 ft.
Cities Service 3-B Ray, SW NW 32-5-20w, 1,649 bbl., Reagan, T.D. 3,626 ft.
Raymond, Rice County: Vickers 4-A Rose, S½ NE SW 20-20-10w, 55 bbl., Arbuckle, T.D. 3,302 ft.
Trapp, Barton County: Shell 8 Ehrlich, NW SE SW 1-16-14w, 3,000 bbl., Arbuckle, T.D. 3,332 ft.
Leader 7 Hinderliter, E½ NW 33-15-13w, 1,258 bbl., Arbuckle, acid, T.D. 3,349 ft.
Cities Service 6 Hoffman-B, N½ S½ NW 7-16-13w, T.D. 3,376 ft.
Silica, Barton County: Virginia 1-B Herter, N½ NW SE 17-20-11w, swabbed 46 bbl., Arbuckle, T.D. 3,312 ft.
Henry Bennett 5 E. Steckel, N½ S½ SW 1-20-11w, swabbed 49 bbl., Arbuckle, T.D. 3,276 ft.
Stanolind 8 Manke, S½ NE SE 28-19-10w, swabbed 55 bbl., Arbuckle, T.D. 3,256 ft.
Fenston-Davis-Gore 3 Gumm, N½ SE SE 34-19-10w, 834 bbl., Arbuckle, T.D. 3,310 ft.
West Silica, Barton County: Hollow Drilling 3 Schartz, W½ NE NW 18-20-11w, 3,000 bbl., Arbuckle, T.D. 3,318 ft.
C. E. Ash 2-C Schartz, E½ NE SE 12-20-12w, 2,585 bbl., Arbuckle, acid, T.D. 3,328 ft.
Stafford, Stafford County: Stanolind 5 Crawford, W½ NE NE 15-24-12w, 3,000 bbl., Viola, T.D. 3,822 ft.
Miscellaneous, Cowley County: Pryor & Lockhart 1 Bice, SE SE SE 24-31-5e, dry, T.D. 2,987 ft.

NEBRASKA COMPLETIONS

Wildcats

Nemaha County: Palensky 1 Casey, NW NE 7-5n-13e, dry, T.D. 3,306 ft., granite 3,300 ft., Arbuckle 3,291 ft.

Fields

Falls City, Richardson County: Harry Harper 6 Sibbernsen, SE NE NW 20-1n-16e, 350-400 bbl., perf.
(Continued on Page 80)

Southwest Texas Fields

(Continued from Page 56)

Southern Minerals 26 Stratton Community, 25 bbl., ⅛-in. choke, perf. casing 6,454-70 ft., T.D. 6,670 ft.
Tomoconnor, Refugio County: Quintana 30-A Williams 746 bbl., ¼-in. choke, perf. casing 5,874-84 ft., T.D. 5,926 ft.

SOUTH TEXAS

Wildcats

Duval County: B. H. Hilburn 1 Gruy, dry, T.D. 2,756 ft.
Live Oak County: Rantex 1 Hinnant, dry, T.D. 6,525 ft.
Stelzig & Clark 1 Derrough, dry, T.D. 2,448 ft.
Webb County: Magnolia 1 Duval County Ranch Co., dry, T.D. 2,491 ft.

Fields

Casa Blanca, Duval County: Adalon Oil Corp. 7-C Martin, 47 bbl., pumping, sand 1,147-52 ft.
Cole-Bruni, Duval County: E. C. L. Oil Co. 2 Benavides, 15 bbl., pumping, sand 1,720-27 ft.
Colorado, Jim Hogg County: Humble 34-B King, 167 bbl., ⅛-in. choke, T.D. 3,034 ft.
Humble 33-B King, 129 bbl., ⅛-in. choke, T.D. 3,009 ft.
Killam, Webb County: O. W. Killam 17 Villareal, 60 bbl., pumping, perf. casing 2,017-23 ft., T.D. 2,075 ft.
Kreis, Duval County: Bridwell 1-A Escapule, 147 bbl., pumping, sand 3,217-31 ft.
Bridwell 1 Perez, 151 bbl., pumping, sand 3,213-22 ft.
Las Animas, Jim Hogg County: Sollars Royalty Co. 1 Holbein, 500,000 cu. ft. gas, perf. casing 1,807-10 ft., T.D. 1,816 ft.
Lopena, Zapata County: Randall & Thompson 1 Ramirez, dry, T.D. 2,626 ft.
Oakville, Live Oak County: Simmons Oil Co. 3-C Reagan, dry, T.D. 2,950 ft.
Nichols, Hidalgo County: Phillips 2 Town, 106 bbl., 5/32-in. choke, perf. casing 3,920-24 ft., T.D. 3,975 ft.
Rincon, Starr County: Continental 105-A Slick, 107 bbl., ⅛-in. choke, perf. casing 3,920-62 ft.
Continental 107-B Slick, 7,320,000 cu. ft. gas, ⅛-in. choke, perf. casing 3,856-70 ft., T.D. 4,234 ft.
Seven Sisters, Duval County: Wellington 1-D Welder, 40 bbl., pumping, sand 2,425-26 ft., T.D. 2,431 ft.
South Campana, McMullen County: Argo Oil Corp. 4-I Edrington, 149 bbl., ¼-in. choke, sand 3,020-29 ft.
Sun, Starr County: Sun 11 Olivarez, 239 bbl., 5/32-in. choke, perf. casing 4,656-60 ft., T.D. 4,942 ft.
Sun 11-B Speer, 225 bbl., ⅛-in. choke, perf. casing 4,603-50 ft., T.D. 4,672 ft.

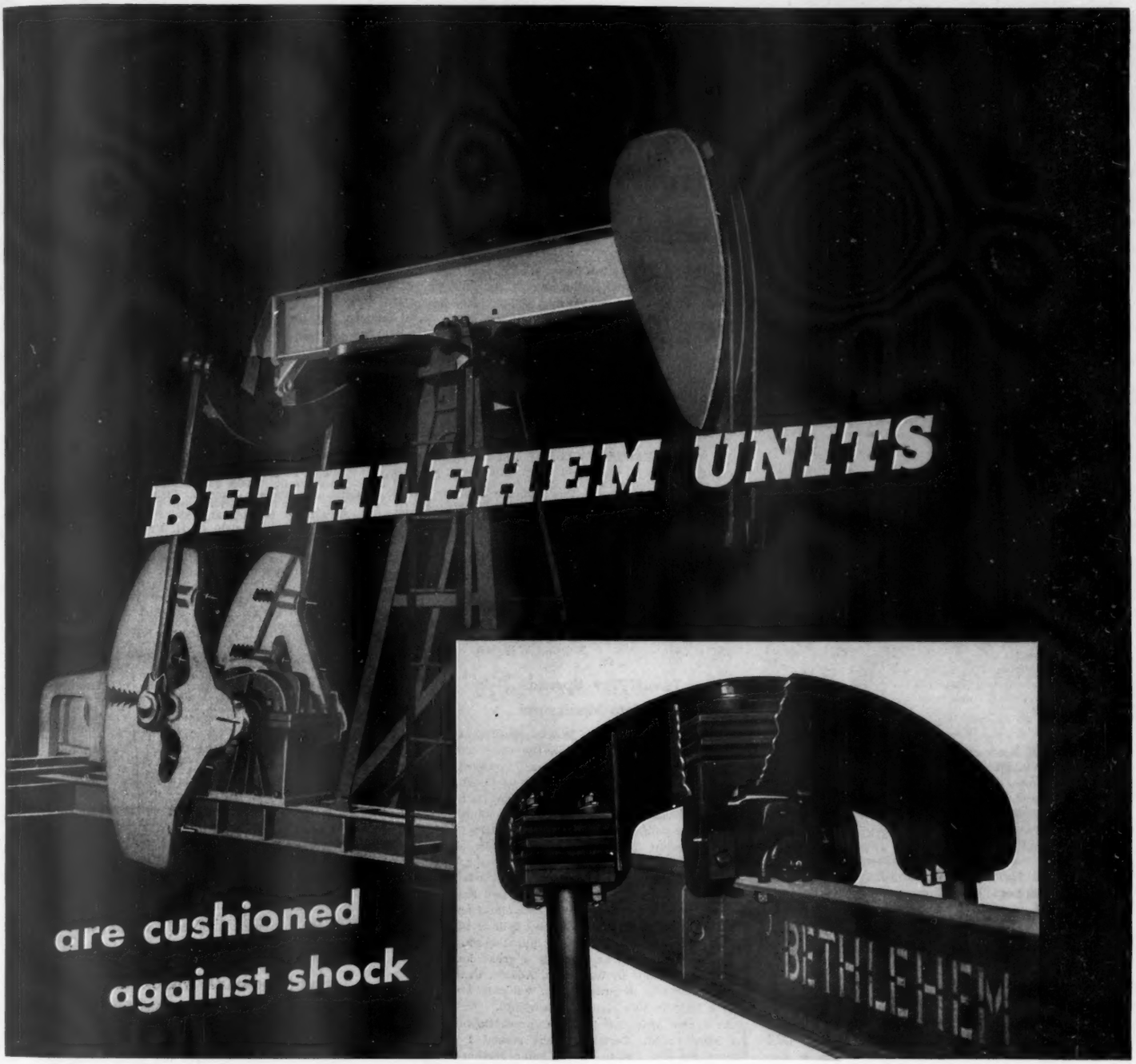
SOUTH CENTRAL TEXAS

Wildcats

Wilson County: Shell 1 Johnson, dry, T.D. 490 ft.
Zavala County: Humble 1 Rosa Wolf, dry, T.D. 6,890 ft.

Fields

Gas Ridge, Bexar County: Corning, Levitt 3 Bitter, 1 bbl., pumping, T.D. 512 ft.
Pearsall, Frio County: Osborn, Swearingen & Miller 3 Davis, dry, T.D. 3,919 ft.
Somerset, Bexar County: C. G. Newton 1 C. E. Walter, dry, T.D. 1,262 ft.



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CALL FOR SERVICE

Pool Opener West of McKamie Gages Larger Flows

By R. MARNE SANFORD

SHREVEPORT, La., Sept. 29.—The new Smackover lime strike in Lafayette County, South Arkansas, and just 4 miles west of the McKamie field, is being hailed as a new discovery well and the daily flow continues to increase.

Tide Water Associated Oil 1 Moore, SW SE 29-17s-24w, just west of the McKamie field, made two successively larger gages the past week to assure the opening of a new field. The wildcat is producing through perforations from 9,330-40 ft. and on a 12-hour gage early in the week flowed 59 bbl. of 45.2-gravity oil in 12 hours, making 2 per cent salt water. This flow was under pressures of 700 lb. on the casing and 1,700 lb. on the tubing and was through a ⅛-in. choke. Later in the week the well made 195 bbl. of oil with 3 per cent salt water through a ⅛-in. choke. This flow was under the increased pressures of 2,100 lb. on casing and 1,400 lb. on tubing. The gas-oil ratio is set at 2,915 to 1.

SUMMARY OF COMPLETIONS

North Louisiana

	No.	Bbl.	Footage
Oil wells: Wildcats	1	5	2,858
Bellevue	3	20	1,240
Caddo	2	55	3,040
Little Creek	3	339	9,421
Olla	3	317	8,260
Urania	1	33	1,516
Gas wells: Monroe	1	*2.0	2,235
Dry holes: Wildcats	1	.....	5,886
Bellevue	1	.....	415
De Soto	1	.....	3,687
Zwolle	1	.....	2,554
Total	18	.....	41,122

Arkansas

	No.	Bbl.	Footage
Oil wells: Stephens	1	50	3,424
Smackover	1	57	2,516
Dry holes: Wildcats	1	.....	665
Total	3	.....	6,605

*Million cu. ft.

No new operations have yet been announced for the area, however, continued development is expected by the discovery firm.

Smackover Test Starts in Union County

Continuing the search for new Smackover lime production in southwestern Arkansas, a new exploratory test is being rigged up to start in Union County. It is Atlantic Refining Co. and Phillips Petroleum Co. 1 Mary E. Davis, 15-17-18, in the Mount Holly area. Contract has been let to Crow Drilling Co. for a test of the Smackover lime.

Arkansas Field Allowables Suffer Cut

Three of Arkansas' largest fields were given allowable cuts at the meeting of the Arkansas Oil and Gas Commission the past week at Columbia County Courthouse in Magnolia.

The Atlantic field was cut 10 per cent or from 2,893 bbl. daily to 2,604 bbl. daily. The Dorcheat field was cut from 2,160 bbl. to 1,540 bbl. daily and the new method of "volumetric withdrawal" used in the field was confined to a top per well allowable of 140 bbl. daily and a top gas-oil ratio of 8,000 to 1. The Magnolia field was cut 5 per cent or from 20,000 to 19,000 bbl. daily. All other of the state's fields were left as they were.

Further, the Macedonia field's allowable was set at 400 bbl. daily until the second well is completed at which time the allowable per well will become 250 bbl. daily. The new field discovery from the Smackover lime in Lafayette County was named the Patton field and given a daily allowable of 400 bbl. The discovery well has reported only 195 bbl. daily potential on its best gage.

ARKANSAS COMPLETIONS

Wildcat, Clarke County: Coker-Grieves 2 Williams, NE NE 7-11s-19w, dry at 665 ft.

Stephens, Columbia County: Fitzwater & McClarkin 1 Allen, SW NE 14-15s-20w, T.D. 3,424 ft., pumped 50 bbl. oil and 50 bbl. water.

Smackover, Ouachita County: Gulf 9 Fincher, SE NW 33-15s-16w, (old well drilled deeper), new T.D. 2,516 ft., pumped 57 bbl. oil and 3 bbl. water.

ARKANSAS WILDCAT REPORT

Columbia County: Wakefield Oil 1 Baker, SE SE NE 13-17-20, S.D. 3,700 ft., last report.

Jefferson County: Curtis-Two Oil 1 Southern Kraft Co., SE NE 35-3s-11w, waiting on cement 103 ft.

Lee County: Stanley A. Thompson 1 Comer, NE NE NE 17-3n-2e, S.D. 3,807 ft.

Lincoln County: J. S. Moore 1 Payne, E½ SE 18-10s-7w, derrick.

Lonoke County: R. V. Riley 1 J. T. Gunter, NW SE 17-5n-10w, T.D. 3,188 ft., fishing.

Nevada County: Coker Oil 1 DeWoody, NE NW SW 23-11s-20w, drilling 1,725 ft.

Barney Dunlap 1 Hart, SE SW 17-13s-21w, derrick.

Prairie County: Alvin E. Stark 1 Fidelity Mutual, NE SW 16-2n-6w, drilling 1,330 ft.

Union County: Atlantic Refining 1 Doris unit, NE NW 15-17s-18w, location.

Delta Drilling Co. 1 Nelson, W½ SE NE 26-17s-15w. S.D. 3,822 ft.

Wilcox Trend Play Spreads To Southeast Into Mississippi

The increasingly active Wilcox developmental play throughout the central part of the state continued to center attention for another week, however, no new startling development marked the 7-day period.

La Salle Parish is the most active parish in the North Louisiana district with full development under way in its Olla, South Olla, Nebo, Little Creek and Cypress Bayou (formerly Walters) fields, all Wilcox producing areas. Development, both leasing and wildcat drilling, is steadily spreading westward to include Winn and Grant parishes, and south and eastward including Catahoula, Concordia, Avoyelles, and Pointe Coupee parishes. Not only is the Wilcox play active in Louisiana, but it is spreading into the southwestern corner of Mississippi and already a great deal of leasing has been done in Wilkinson, Adams, Franklin and Amite counties. Several Wilcox wildcats are preparing to start in this area of Mississippi.

As a new operation in the Cypress Bayou field of La Salle Parish, Carter Oil has staked 1 Highland Farms, SE NW 12-6-4e, in the same section with the company's 3 Louisiana Delta Hardwood Co., which is taking side-wall cores at 5,976 ft. Between the Cypress Bayou and the Larto Lake fields Carter Oil is digging pits for 1-G Tensas Delta Co., NE SW 30-6-5e, and west of Larto Lake and in La Salle Parish, Carter is digging pits for 1-E Tensas Delta Co., NW NW 5-5-4e.

A deep wildcat test in Catahoula Parish which is going ahead below the Wilcox formation is attracting considerable attention. It is H. L. Hunt 2-A Louisiana Central, NW SE 9-9-6e. The Wilcox was topped at 3,037 ft. and the Midway was found at 5,650 ft. It is now below 7,625 ft. and still making hole. The wildcat is just west of the town of Harrisonburg.

Partially defining a large block held by H. L. Hunt on the Goodpine Lumber Co.'s land in Grant Parish, that operator's 6-F Goodpine, SE NW 29-9n-1e, is bottomed at 4,283 ft. with no shows found in the Wilcox. Abandonment is scheduled. Just southeast of this failure, 3½ miles, the same operator had previously staked 10-F Goodpine as a wildcat test. Drilling is now doubtful. Likewise, the operator's 5-F Goodpine, in the township immediately north and located in SW SE 22-8n-1w, is a location for a Wilcox test, the drilling of which is now doubtful.

De Soto Discovery Proves Discouraging

The recent strike made in De Soto Parish by J. E. Stack at 1 Cook, SW NE 32-13-14, was officially gaged for a none too promising discovery well. With a total depth of 2,858 ft. and the 7-in. casing cemented at 2,814 ft., the well pumped on one gage 20 bbl. of fluid, of which 80 per cent was salt water. It later pumped at the official rate of 5 bbl. of oil and 50 bbl. of water daily. The pay had been acidized with 3,000 gal. and the oil is 42° gravity. Little subsequent development is expected for the sector.

Wildcatting Still Active

New wildcat tests for the week included two Wilcox exploratory tests and one rework job for West Carroll Parish. In Franklin Parish, H. L. Hunt has staked 6 Chicago Mill & Lumber Co., SW NW 21-12n-9e. It is already started and is drilling at 50 ft.

In Tensas Parish, A. Z. Phillips has staked 1 Gentry, SW SE NW of irregular Section 22-12n-12e. It is a soil-analysis prospect.

In West Carroll Parish, C. Andrade III has taken over the recently abandoned Crow Drilling Co. and R. T. Thornton 1 Bruce Lumber Co., in 16-21n-9e. It was quit about 2 months ago at 6,285 ft. as a Smackover lime failure, however, the new operator plans a test of the Monroe gas rock. It will be plugged back to that level.

NORTH LOUISIANA COMPLETIONS

Wildcats, De Soto: J. E. Stack 1 Cook, SW NE 32-13n-14w, T.D. 2,858 ft., pumped 5 bbl. oil and 50 bbl. water daily, 3,000 gal. acid, 42° gravity oil.

Catahoula Parish: Roy L. Fisher 1 Bradford, SW NW irregular 29-7n-5e, top Wilcox 3,145 ft., Midway 5,771 ft., dry at 5,886 ft.

Bellevue, Bossier Parish: C. H. French 9 Larkin, NE SW 14-19n-11w, pumped 8 bbl., 395 ft.

Premier investment 55 Wyche, SE NW 14-19n-11w, pumped 10 bbl., 424 ft.

Premier Investment 59 Wyche, SE NW 14-19n-11w, pumped 12 bbl., 426 ft.

Tide Water 7-J Lodwich Lbr. Co., NE SW SW SE 10-19n-11w, dry at 415 ft.

Caddo, Caddo Parish: Davies & Hart 5-A Muslow, SW NE 5-20n-15w, pumped 30 bbl., 1,505 ft.

Hawkins & Stewart 1 Muslow, NW SE 31-21n-15w, pumped 25 bbl., 1,535 ft.

De Soto, De Soto Parish: Gulf Refg. 36-A Jenkins, NW SE 2-12n-12w, (old well drilled deeper), old T.D. 2,453 ft., new T.D. 3,687 ft., dry.

Little Creek, La Salle Parish: Placid Oil 9-A Tremont, SW SE 24-9n-1e, T.D. 2,600 ft., perf. casing 2,443-46 ft., flowed 187 bbl. oil and 64 bbl. water.

H. L. Hunt 38-F Goodpine, SE SE 30-9n-2e, T.D. 2,720 ft., perf. casing 2,388-98 ft., pumped 127 bbl. oil and 23 bbl. water.

H. L. Hunt 5 Tannehill & Gallagher, NW SE 31-9n-2e, T.D. 4,091 ft., perf. casing 4,010-18 ft., flowed 25 bbl. oil and 6 bbl. water.

Monroe, Morehouse Parish: South Carbon Co. 38 Tensas, SE NW 23-22n-4e, T.D. 2,235 ft., 1,950,000 cu. ft. gas daily.

Olla, La Salle Parish: Placid Oil 108 Louisiana Central Lbr. Co., SE NW 19-10n-3e, T.D. 2,400 ft., perf. casing 2,194-2,204 ft., flowed 108 bbl. oil and 2 bbl. water.

Placid 109 Louisiana Central Lbr. Co., SE SW 2-9n-2e, T.D. 2,850 ft., perf. casing 2,404-14 ft., flowed 109 bbl. oil and 31 bbl. water.

Placid 111 Louisiana Central Lbr. Co., NW NW 11-9n-2e, T.D. 3,010 ft., perf. casing 2,350-56 ft., flowed 100 bbl. oil and 5 bbl. water.

Urania, La Salle Parish: Arkansas Fuel Oil 15-B Urania, SW NE 18-10n-2e, T.D. 1,516 ft., flowed 33 bbl. oil and 2 bbl. water.

Zwolle, Sabine Parish: Hunter Co. 1-C Sabine Lbr. Co., NW SE 17-7n-13w, dry at 2,554 ft.

NORTH LOUISIANA WILDCAT REPORT

Bienville Parish: R. E. Collins 1 Madden, SW SW SE 3-16n-8w, running 8-in. casing at 1,780 ft.

Caldwell Parish: Southern Carbon Co. 1 Howard, SW SE 13-14n-4e, Wilcox 1,105 ft., Midway 2,860 ft., Cretaceous 3,438 ft., perf. casing 3,497-3,508 ft., tested salt water, squeezed off, perf. casing 2,372-80 ft., tested water, squeezed.

Catahoula Parish: O. C. Borah 1 Womack, irregular Section 54-9n-5e, S.D. 2,750 ft.

H. L. Hunt 2-A La. Central, NW SE 9-9n-6e, Wilcox 3,037 ft., Midway 5,649 ft., drilling 7,625 ft.

Claiborne Parish: Hunt Oil 1 Mitchiner, NE SW SW 15-23-7, massive anhydrite 3,897 ft., stringer 4,182 ft., drilling 6,752 ft.

Franklin Parish: H. L. Hunt 6 Chicago Mill & Lumber Co., C SE NW 21-12n-9e, drilling 50 ft.

Sabine Parish: Roy Raines 1 C. Carter, 27-9-11, old T.D. 2,403 ft., deepened to 3,485 ft., S.D.

West Carrol Parish: C. Andrade III 1 Bruce Lbr. Co. (old well drilled deeper), old T.D. 6,285 ft., prep. to test Monroe gas rock.

Shelby County Wildcat Near Testing Stage

In Shelby County, Texas, the Grady Vaughn 1 Frost, Buckley Survey, promising wildcat of last week, is still awaiting testing. Casing has been unloaded at the test, located about 9 miles southwest of Center and the Paluxy zone at 6,748 ft. will be tested. Core recoveries are credited for the testing plans, electrical survey reportedly having shown little promise.

In Red River County Magnolia is preparing to start its long planned deep Smackover lime test on a 20,000-acre block. It will be 1 J. N. Henry, 700 ft. from the north and 640 ft. from the west lines of a 100-acre tract in the M.E.P.&P. Survey 103. Contract depth is 6,500 ft. which is expected to reach the Smackover lime found in southwestern Arkansas.

Kanawha County Well Makes Good Producer in Big Lime

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Sept. 29.—The past week was featured by a 400-bbl. well in West Virginia, but in Southwest Pennsylvania the deep test on the Kellersburg anticline found the Oriskany sand missing which still further diminishes the Oriskany area. Completions totaled 23 of which 2 were dry, 16 gas wells, and 5 oil producers with a daily initial of 411 bbl.

In Armstrong County the deep test of T. W. Phillips Gas & Oil Co. et al on the W. T. Diedenbach farm on the Kellersburg anticline in West Franklin Township about 3 miles due north of Worthington on Route 422, was bottomed at 6,000 ft. and dry in the Lower Devonian. With a surface elevation of 1,170 ft. the Oriskany horizon was placed at 5,910 ft. At that point, the formation changed from Onondaga lime and chert to Helderburg with no glauconite nor Oriskany sand present.

SUMMARY OF COMPLETIONS

Southwest Pennsylvania

	No.	Bbl.	Footage
Gas wells	5	*0.7	11,912

West Virginia

	No.	Bbl.	Footage
Oil wells	5	411	9,798
Gas wells: Oriskany	6	*18.0	30,604
Other	7	*1.1	15,515
Dry holes	2	.....	3,633
Total	20	....	59,550
Recompletions	1	*0.6	.....

*Million cu. ft.

On Chestnut Ridge in South Union Township, Fayette County, Peoples Natural Gas Co. set casing at 6,777 ft., the Tully lime, in 4 Piedmont Coal Co. In No. 5, same lease, this company recemented the casing set in the Onondaga chert and after drilling and recovering the gas (675,000 cu. ft.) from the pays in the chert beds to 6,612 ft., is now shut in testing the casing.

Here, New Penn Development Co. is drilling J Carothers at 6,250 ft. with no markers showing and indications that it is running low; 1 Kirby at 5,605 ft. and fishing bailer; 4 Heyn (Summit Hotel) at 210 ft. Greensboro Gas Co. has resumed drilling 1 Barton at 6,235 ft. after cementing a cave.

In Maryland New Penn Development Co. et al are drilling at 7,319 ft. in the wildcat on the Humberson farm on the Accident dome in Garrett County, with the hole apparently now corrected.

SOUTHWEST PENNSYLVANIA COMPLETIONS

Armstrong County

Boggs Township: J. K. Sharp et al 3 James Sefton, 60,000 cu. ft. gas, Thirty-foot sand, T.D. 1,757 ft.

Clarion County

Limestone Township: Owens Illinois Glass Co. 1 C. W. McClure, 10,000 cu. ft. gas, Speechley, T.D. 2,650 ft.

Greene County

Jefferson Township: J. B. Myers et al 1 Milliken, 114,000 cu. ft. gas after shot, Bayard 3,210-42 ft., gas 3,211 ft., T.D. 3,407 ft.

Richhill Township: Manufacturers 1 Henry Dinsmore, 350,000 cu. ft. gas, Dunkard stray sand, T.D. 1,147 ft.

Washington County

North Strabane Township: Peoples 1 Wallace Hamilton, 130,000 cu. ft. gas, Fifth sand 2,648 ft., gas 2,632 ft., T.D. 2,951 ft., R.P. 103 lb.

Big Lime Yields Good Oil Flow in Kanawha County

In Kanawha County Columbian Carbon Co. completed 3 Homer C. Jones in Poca district as an oil producer from the Big lime, total depth 1,687 ft. After indications of being a fair well, it was acidized and then produced 400 bbl. the first 24 hours. Same company's No. 2 on this farm, originally scheduled for the Oriskany sand gas, as it is an inside well, was also halted in the Big lime on account of oil. It has been producing now for 4 months and holding up at over 50 bbl. a day. The wells are located about 4¼ miles due northeast of Sissonville.

A little west of this new producer, South Penn Natural Gas Co. is producing about 10 bbl. a day after acidizing 1 G. W. Burdette in the Big lime at 1,605 ft. It will be given a second acidizing to see if it improves.

In Monongalia County Hope Natural Gas Co. is drilling at 7,340 ft. in the wildcat on the H. C. Greer et al lease in Morgan district. On account of gas pockets a 6-in. pilot hole is first drilled, followed with the 8-in. tools. In Lewis County this company's rotary test on the Alfred Woofter farm in Freemans Creek district is drilling at 6,600 ft.

Boone County

Crook district: Owens, Libby-Owens 34 Allen & Pryor, 206,000 cu. ft. gas, Berea, T.D. 2,528 ft.

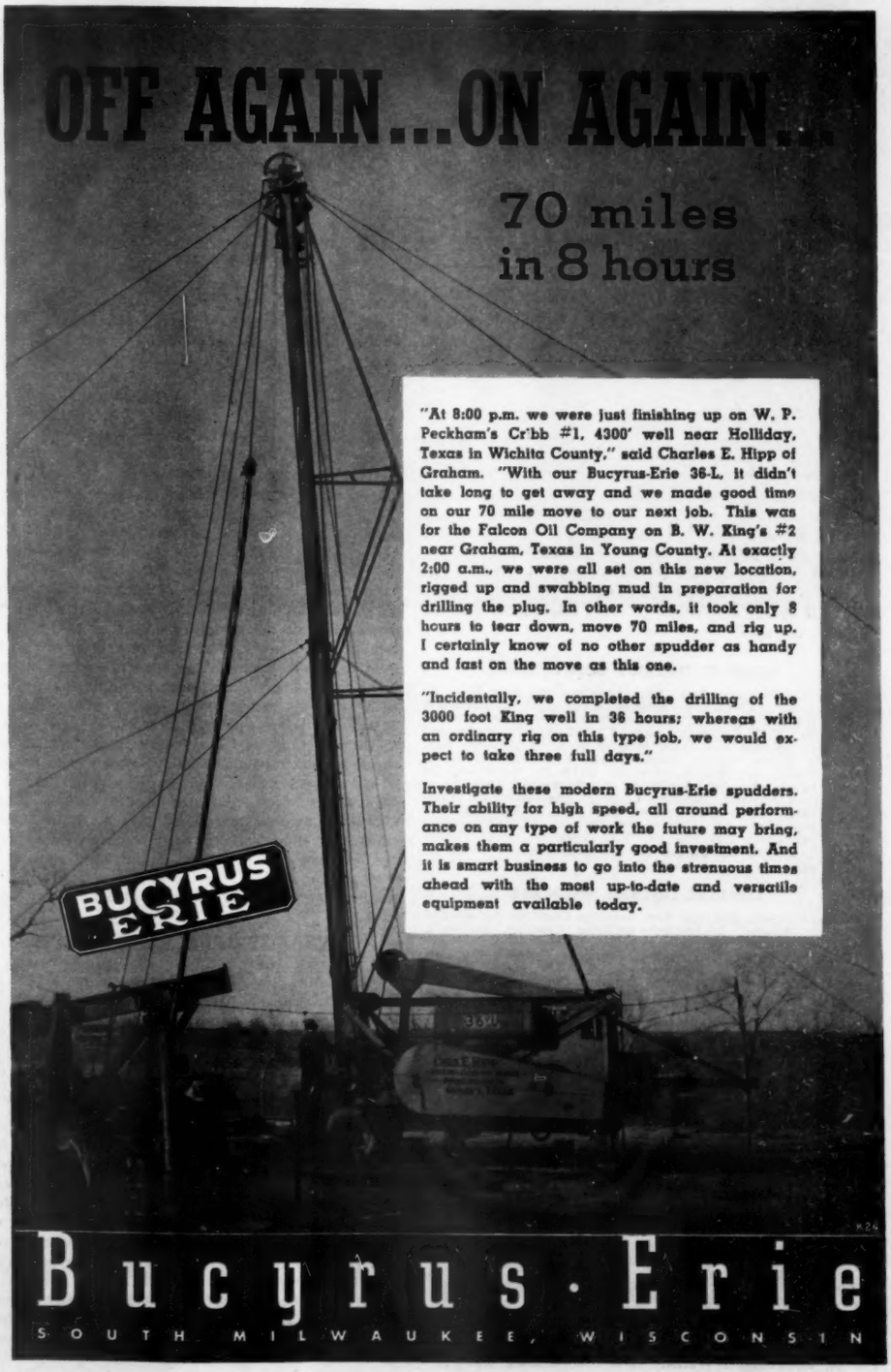
Cabell County

Grant district: C. D. Raines et al 1 Emma G. Hanley, 160,000 cu. ft. gas, brown shale, T.D. 3,562 ft.

Calhoun County

Sherman district: Godfrey L. Cabot, Inc., 1 Alva Elliott, 3 bbl., Injun sand, T.D. 1,970 ft.

(Continued on Page 67)


OFF AGAIN...ON AGAIN...
70 miles in 8 hours
"At 8:00 p.m. we were just finishing up on W. P. Peckham's Cr'bb #1, 4300' well near Holliday, Texas in Wichita County," said Charles E. Hipp of Graham. "With our Bucyrus-Erie 36-L, it didn't take long to get away and we made good time on our 70 mile move to our next job. This was for the Falcon Oil Company on B. W. King's #2 near Graham, Texas in Young County. At exactly 2:00 a.m., we were all set on this new location, rigged up and swabbing mud in preparation for drilling the plug. In other words, it took only 8 hours to tear down, move 70 miles, and rig up. I certainly know of no other spudder as handy and fast on the move as this one.
"Incidentally, we completed the drilling of the 3000 foot King well in 38 hours; whereas with an ordinary rig on this type job, we would expect to take three full days."
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Pico Anticline Wildcat Cores Thick Section of Oil Sand

By L. P. STOCKMAN

LOS ANGELES, Calif., Sept. 29. — All indications point to the probability that California will have a new oil field within the next week or 10 days as Aztec Oil Co. has cored 338 ft. of loose porous oil sand at 6,113 ft. in its Newhall wildcat located on the major Pico anticline. The company has not taken the entire section but the zone to be produced looks so good that an immediate production test will be made. A 7-in. water string will be cemented at 5,895 ft. which is below the top of the zone as it is hoped this will keep the gas-oil ratio down to a minimum. The oil zone found in Aztec's wildcat is the best looking oil sand found in any well in the Newhall-Castaic region with respect to porosity, permeability, and amount of oil and gas in evidence. This oil sand is in the Modelo member of the Miocene and is possibly comparable with the third Modelo zone that is productive in the Newhall-Potrero, Del Valle, and other fields in the area. The third Modelo zone is the best of the three zones opened up in the Miocene to date and has been found highly productive in several areas. Officials of the company, while quite reticent to state they have a good well in sight, are of the opinion that this will prove to be a major discovery. The geological work on this wildcat and on the structure as far as the Miocene is concerned has been done by David Wosk, who is one of a few thoroughly familiar with the area.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: San Joaquin Valley	5	3,675	28,757
Coastal district	3	1,837	21,174
Los Angeles Basin	4	444	15,712
Dry holes: Fields	3	.....	10,854
Wildcats	1	.....	7,244
Total	16	.....	83,741

COASTAL DISTRICT COMPLETIONS

Newhall-Potrero, Los Angeles County: Barnsdall 25 R.S.F., 27-4n-17w, flowed 1,339 bbl., 34.5-gravity, 0.1 per cent cut, 32/64-in. bean, pressures 425/650 lb., T.D. 7,463 ft., perf. 7,202-7,461 ft., completed in second and third Modelo zone of Miocene age.

Santa Maria Valley, Santa Barbara County: Union 1 Boyd, 32-10n-33w, dry at 4,519 ft., bottomed in fault zone, no showings of importance logged.

Ventura Avenue, Ventura County: Associated 28 Hartman, 22-3n-23w, flowed 148 bbl., 27.8-gravity, 50 per cent cut, 430,000 cu. ft. gas, 48/64-in. bean, pressures 200/450 lb., T.D. 7,607 ft., perf. 7,400-7,604 ft., completed in Ventura zone of Pliocene age.

COASTAL DISTRICT WILDCATS

Aliso Canyon district, Los Angeles County: Associated 1 Mission, 26-3n-16w, drilling 4,498 ft. in sand, elev. 2,709 ft.

Castaic district, Los Angeles County: Texas 1 Fernando, 11-4s-17w, building rig.

Cat Canyon district, Santa Barbara County: A. E. Bell 1 Gilmore, 23-9n-33w, drilling 5,791 ft. in oil sand and chert.

Standard 3 Los Flores, 27-9n-33w, drilling in sand and sticky shale 4,060 ft., elev. 1,065 ft.

Union 12 Bell, 27-9n-33w, rig, is offset to Standard's 2 Los Flores.

Union 15 Bell, 27-9n-33w, building rig.

Camulos ranch, Ventura County: Western Gulf 1 Rubel, 22-4n-18w, drilling in sand and shale 4,582 ft., elev. 752 ft.

Chatsworth district, Los Angeles County: Imperial Oil Co. 1 Chatsworth, 25-2n-17w, rig.

Del Valle district, Los Angeles County: Bankline Oil Co. 1 Videgain, 17-4n-17w, drilling 7,031 ft. in shale and oil sand, Miocene 5,856 ft., elev. 1,719 ft.

Standard 1 Sepulveda, 17-4n-17w, drilling 5,828 ft. in oil sand showing good kick, elev. 1,359 ft.

Ohio 1 Vasquez, 17-4n-17w, drilling in oil sand and shale 6,197 ft., elev. 1,718 ft.

Elwood district, Santa Barbara County: Barnsdall-Richfield 88-11 State, tideland, drilling 5,160 ft. in sand and shale, elev. 21 ft.

Loma Grande district, Monterey County: Loma Grande Oil Co. 1 Corey, 23-24s-10e, T.D. 3,790 ft. in shale, fishing drill pipe, elev. 1,500 ft.

Newhall district, Los Angeles County: Aztec Oil Co. 1 Sanborn, 6-3n-16w, drilling 6,040 ft. in Miocene oil sand and sandy shale, elev. 1,516 ft.

R. W. Young 1 Walker, 11-4n-16w, drilling 4,355 ft. in hard sand and shale, had oil and gas shows on ditch, elev. 1,254 ft.

Oak Canyon district, Los Angeles County: Western Gulf 1 Wickham, 31-5n-17w, drilling 880 ft. in sand, being drilled by Kern Drilling Co., elev. 1,916 ft.

Hathaway Co. 2 Ram, 31-5n-17w, drilling 1,984 ft. in sand and shale.

Rincon district, Ventura County: C. C. M. Oil Co. 3-C Hobson, 17-3n-24w, drilling 10,250 ft. in hard tight oil sand and shale, elev. 245 ft.

Towsley Canyon district, Los Angeles County: Barnsdall and Ambassador Pet. 1 Limebocker, 17-3n 16w, drilling 2,198 ft. in hard sand and shale, elev. 1,680 ft.

SAN JOAQUIN VALLEY

Shell Oil Co., Inc., removed any doubt about the productivity of the Raisin City field of Fresno County in the San Joaquin Valley this week by completing its third well in that field flowing at the rate of 1,224 bbl. of clean 22.3-gravity oil and 425,000 cu. ft. of gas per day from a depth of 5,064 ft. This well was carried down to 5,225 ft. but was plugged back to the completion depth before being brought in. This is the first large well completed in the Raisin City field since its discovery a few months ago and thus indicates without a doubt that this field will be an important factor in future production and crude-oil reserves. The first two completions at Raisin City were small flowing wells and thus the true potentiality of the area has been somewhat in doubt although it has been generally believed that Raisin City would give a good account of itself. Shell's new well was 28-18 Properties, Inc., and it is located northeast of the discovery well. Development work to date has been limited to operations of Shell but now other operators have entered the field. After finishing the discovery well, Shell moved south for the second well and finished a small producer. The company then moved northeast of the discovery well and brought in 28-18 Properties, Inc., which was finished this week as a large flowing well. All three of Shell's producing wells in the Raisin City field have been completed in the lower zone as the upper zone has so far defied attempts to produce it. The seismograph survey on this field definitely indicated the apex of the structure as being north of present work and drilling to date tends to verify this record. With Bandini Petroleum and Seaboard Oil Corp. already at work on new wells in the Raisin City field it is quite possible that additional geological data will be available within the next 30 days. Shell drilled its 28-18 Properties, Inc., in 32 days which indicates that the digging is good. Raisin City is the first commercial oil field north of Coalinga which has almost always been considered the northern limits of production, and when Shell finished its first flowing well a few months ago it opened up another 50,000 acres of potential oil land for development.

AVERAGE DAILY PRODUCTION

	Sept. 27	Sept. 20
Wilmington	85,475	85,525
Midway-Sunset	43,825	47,450
Coalinga	42,475	45,750
Long Beach	38,400	39,050
Kettleman North Dome	38,250	39,925
Ventura Avenue	36,425	38,175
Huntington Beach	33,525	33,200
Santa Fe Springs	23,425	23,600
Dominguez	23,400	22,050
Santa Maria Valley	19,850	19,250

Shell Oil Co., Inc., appears to have discovered a new oil field in the Dyer Creek district of Kern County but this will not be actually a fact until the discovery well, 56-11-X Smith in 11-26s-27e, is on production and running oil into tanks. This well has been on production several times but in each instance it sanded up and necessitated pulling the rods and cleaning out the hole. This well cored about 18 ft. of Vedder oil sand and shale and should make a good pumper if sand can be kept out of the hole. The significance of this discovery is the fact that the discovery well, while not very satisfactory from a production standpoint, tends to indicate the existence of a possible commercial accumulation in the immediate area. Additional drilling will probably have to be done to definitely determine the importance of the find. The longest time that 56-11-X Smith has been on production is about 7 hours. This well, like the discovery well at Raisin City in Fresno County, may be located on the edge of a normal field in which case, again like Raisin City, subsequent drilling may prove more satisfactory. Dyer Creek is a trap behind a fault as is the case of Mount Poso, Round Mountain, Dominion, Coffee Canyon, and other similar fields along the east rim of the San Joaquin Valley in southern Kern County.

Operators are keenly following results of a test being made by Standard Oil Co. in the extreme eastern edge of the Kettleman North Dome field on 1-1-U fee in 1-23s-18e. This deep test has been drilled to 12,884 ft. and redrilled to 11,640 ft. Preparations are being made to make a production test of a sand that has shown productive possibilities but which has not yet been given a conclusive test. This well is of interest because the bottom of the hole is undoubtedly in the Cretaceous and if large production is developed it will open up the Cretaceous for development throughout the field. This would be an important development and of considerable importance from a production and reserve standpoint. The sand to be tested may fail to produce commercially but its importance cannot be overemphasized, for if the Cretaceous is found productive it will result in a change in present expectations as far as the Cretaceous is concerned and lead to additional drilling in the Panoche and other adjacent sections of Fresno County. It will be recalled that Jergins Oil Co. developed small production of oil and gas in the Cretaceous in the Panoche district of Fresno County and has since commissioned a graduate student at the University of California to undertake a complete study of the California Cretaceous to ascertain its production possibilities. This study has not yet been finished.

SAN JOAQUIN VALLEY COMPLETIONS

Delhi wildcat district, Yolo County: Amerada Pet. 1 Finance Construction, 4-6n-3e, dry at 7,244 ft., formation test 2,825-90 ft. open 34 min., fair blow 8 min., recovered 320 ft. of mud and water.

Greeley, Kern County: Superior 2 Griffith, 1-29s-25e, flowed 1,692 bbl., 37.5-gravity, 0.2 per cent cut, 940,000 cu. ft. gas, 32/64-in. bean, pressures 1,100/1,250 lb., T.D. 11,480 ft., perf. 11,439-80 ft., completed in Rio Bravo zone of Miocene age 11,437-80 ft.

Kern River, Kern County: General Pet. 49 Young, 14-28s-27e, pumped 204 bbl., 14.7-gravity, 15 per cent cut, T.D. 1,958 ft., perf. 1,602-35 ft., 1,674-93 ft., 1,705-35 ft., 1,754-84 ft., 1,826-46 ft., 1,919-57 ft., completed in Tegeler zone of Pliocene age.

Kettleman North Dome, Kings County: R. S. Lytle 2 Felix, 35-21s-17e, flowed 500 bbl., 35.1-gravity, 4 per cent cut, 128/64-in. bean, pressures 75/350 lb., T.D. 8,846 ft., perf. 8,671-8,846 ft., recompleted after being deepened from 8,100 ft.

Midway-Sunset, Kern County: Quality Oil Co. 2 Cypress, 22-32s-23e, pumped 50 bbl., 15.1-gravity, 5 per cent cut, T.D. 1,984 ft., P.B. 1,520 ft., perf. 1,420-1,500 ft., recompleted after hole cleaned out and plugged to 1,520 ft.

Mount Poso, Kern County: Shell 31 Security, 16-27s-28e, pumped 113 bbl., 15.1-gravity, 30 per cent cut, T.D. 2,020 ft., perf. 1,943-2,020 ft., completed in Vedder oil zone of Miocene age 1,944-2,020 ft.

Raisin City, Fresno County: Shell 28-18 Properties, Inc., 18-15s-18e, flowed 1,224 bbl., 22.3-gravity, 0.3 per cent cut, 425,000 cu. ft. gas, 32/64-in. bean, T.D. 5,225 ft., P.B. 5,064 ft., perf. 5,020-64 ft., completed in Raisin City zone of Miocene age.

Round Mountain, Kern County: Signal Pet. 1 Larkin, 12-28s-28e, dry at 2,225 ft. in gray Vedder sand of Miocene age 2,102-2,225 ft.

Ten Section, Kern County: Shell 66-29-A Kern County Land, 29-30s-26e, flowed 442 bbl., 36.6-gravity, 0.2 per cent cut, 397,000 cu. ft. gas, 14/64-in. bean, pressures 1,100/1,800 lb., T.D. 8,235 ft., perf. 8,007-8,131 ft., 8,141-8,231 ft., completed in Stevens oil zone of Miocene age.

SAN JOAQUIN VALLEY OUTPOSTS

Belridge, Kern County: Belridge Oil Co. 55-26 fee, 26-27s-20e, drilling 10,370 ft. in hard sand, Eocene 9,545 ft., now below top of productive Wagonwheel zone of Eocene age, elev. 658 ft.

Buena Vista Hills, Kern County: Honolulu 25-P fee, 10-32s-24e, T.D. 14,622 ft., P.B. 11,059 ft., recovered stuck drill pipe to 12,880 ft., cemented 7-in. blank liner 8,016 ft., test 5,744-6,611 ft., 6,897-7,618 ft., 8,832-10,029 ft., flowed gas and salt water, elev. 916 ft.

Canal, Kern County: Shell 44-14-A Kern County Land, 14-30s-25e, drilling in oil sand 9,796 ft., will be first Vedder zone test in field, elev. 325 ft.

Elk Hills, Kern County: Standard 42-31-S fee, 31-30s-24e, T.D. 8,029 ft. in shale, lost drill pipe, redrilled to 5,935 ft., trying to produce, elev. 1,122 ft.

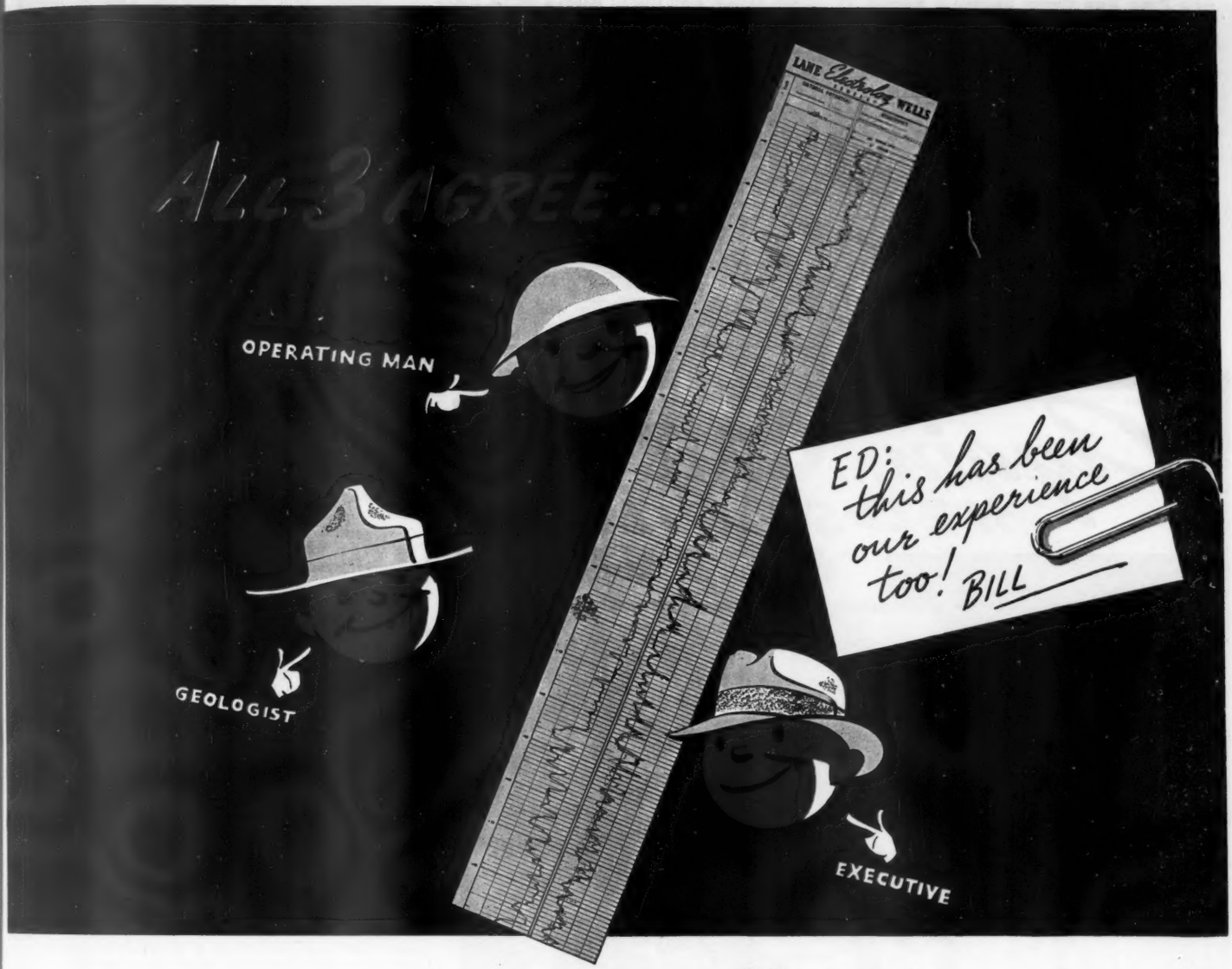
Standard 62-31-S fee, 31-30s-24e, rigging up and preparing to spud.

Standard 45-19-S fee, 19-30s-24e, drilling 10,530 ft. in sand and shale, elev. 707 ft.

Standard 24-19-R fee, 19-30s-23e, drilling 391 ft. in sand.

Standard 76-33-S fee, 33-30s-24e, drilling 3,271 ft. in sand, elev. 996 ft.

Greeley, South, Kern County: A. N. Macrate 1 Haberfeld, 32-29s-26e, drilling 9,901 ft. in gray sand and shale, top Stevens zone of Miocene age 8,090 ft., elev. 338 ft.



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LANE-WELLS TECHNICAL OILFIELD SERVICES *Everywhere*

Kern Front, Kern County: Richfield 1 Kraemer, 34-28s-27e, rigging up.
Kettleman North Dome, Kings County: Standard 1-1-U fee, 1-23s-18e, drilling 12,884 ft. in hard gray sand showing considerable gas, redrilled to 11,640 ft., reaming, will test, elev. 693 ft.
Midway-Sunset, Kern County: North American Oil Consolidated 1-28 W.P., 28-32s-23e, T.D. 9,390 ft. in oil and and shale with streaks of tight impervious sand and siltstone, elev. 1,560 ft.
Mountain View, Kern County: Richfield 1 M.V., 18-30s-28e, drilling and spot coring 6,750 ft. in sand, elev. 375 ft.
Hogan Pet. Co. 1-A Bahrenburg, 32-30s-29e, drilling 1,091 ft. in sand and shale, will be deep test.
Paloma, Kern County: Union 81 Morgan, 14-32s-26e drilling 11,260 ft. in sand and shale of low permeability, elev. 306 ft.
Western Gulf 12-7 Symons, 7-32s-27e, drilling 9,350 ft. in sand, is most easterly well in field.
Raisin City, Fresno County: Bandini Pet. 82-23 S.P., 23-15s-17e, rig.
Seaboard Oil Corp. 88-13 S.T.U., 13-15s-17e, drilling 945 ft. in sand.
Rio Bravo, Kern County: Union 21-33 Pacific States, 33-28s-26e, drilling 12,530 ft. in sand below Vedder zone of Miocene age, will go to Eocene if possible, elev. 330 ft.
Union Avenue, Kern County: Hancock Oil Co. 2 Roberts, 6-30s-28e, T.D. 5,000 ft. in sand and shale, P.B. 2,450 ft., redrilling 4,040 ft.

SAN JOAQUIN VALLEY WILDCATS

Altamont district, Alameda County: Shell 1 Nissen, 7-2s-3e, drilling 4,490 ft. in sand and shale, elev. 1,023 ft.
Belridge district, Kern County: Sec. 27 Oil Co. 1 Aslin, 27-28s-22e, drilling 1,330 ft. in sand.
Chowchilla district, Madera County: Shell 74-9 Chowchilla Farms, 9-11s-14w, drilling 8,160 ft. in sand, no showings to date.
Delano district, Kern County: Shell 52-21 Bell, 21-25s-26e, rigging up.
Devils Den district, Kern County: R. S. Miesse 1 Jacquelyn, 26-25s-18e, T.D. 450 ft. in oil sand and shale, cleaning out and rigging up.
Dyer Creek district, Kern County: Shell 56-X-11 Smith, 11-26s-27e, drilling 2,361 ft. in sand, 5½-in. casing cemented 2,325 ft., is above Vedder zone of Miocene age, cleaning out.
Helm district, Fresno County: Amerada 31-34 Clover, 34-16s-17e, drilling 9,910 ft. in sand and hard Kreyenhagen shale, elev. 203 ft.
Jacalitos district, Fresno County: Wilshire-Annex 33-26-E, drilling 5,880 ft. in gray sand and shale, Temblor 3,875 ft., Kreyenhagen 4,682 ft., elev. 941 ft.
Kerman district, Fresno County: S. B. Herndon 1 Bottoms, 3-14s-16e, drilling water well and grading location, waiting for derrick, elev. 187 ft.
McDonald anticline district, Kern County: Texas 1 Anderson, 19-28s-20e, drilling 3,060 ft. in sand and shale, elev. 1,080 ft.
Panoche district, Fresno County: Richfield 1 Stone-Bragg, 33-13s-12e, T.D. 5,724 ft. in sand and shale, will abandon, elev. 358 ft.
Rio Vista district, Solano County: Standard 1 Suisun Comm., 36-4n-2w, drilling 5,150 ft. in sand and shale, objective is Cretaceous gas zone, formation tests: 2,755-2,830 ft., no blow; 5,023-36 ft., recovered salt water.
Standard 1 Bradford, 20-3n-3e, drilling 4,294 ft. in sand, elev. 5 ft.
Standard 1 Productive Prop., 23-3n-3e, drilling 4,070 ft. in sandy shale, elev. 5 ft.
Rumsey Hills district, Yolo County: Standard 1-1 Tippetts, 15-12n-3w, drilling in sand 2,040 ft., repairing equipment, elev. 1,480 ft.
Shafter district, Kern County: Continental 2-G Kern County Land, 35-27s-24e, T.D. 12,935 ft. in either Rio Bravo or Vedder gray sand, had poor core recovery, swabbed and flowed 250 bbl. oil and 400 bbl. water, cleaned out to 12,850 ft., perf. 12,803-06 ft., swabbing oil and water.
General Pet. 51-15 S.P., 15-28s-24e, rigging up.
Shale Hills district, Kern County: H. C. Morton 1 Core Hole, 30-26s-19e, drilling 2,205 ft. in shale and oil sand.

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LOS ANGELES BASIN

Continental Oil Co. found some favorable showings in its Turnbull Canyon wildcat in the Whittier district in 13-2s-11w, and this well may bear watching during the next several days. On a formation test at 3,270-3,340 ft. with the tester open 1 hour the recovery consisted of 1,700 ft. of 20-gravity oil and 1,640 ft. of water testing 300 grains of salt per gallon. During the test the well showed a good gas blow and appeared to have some kick. The well is at present being cored ahead and much depends upon what is found in the next 100 ft. This is one of the most promising tests under way in southern California at present as the well has shown definite production possibilities. A water string will be landed and cemented within the next week after which the well will be given a production test. Even though it fails to flow the well appears to have the makings of at least a commercial pumper. It would not take a very large initial to justify further drilling since the drilling is relatively fast and costs comparatively low as compared with costs of deep wells in the San Joaquin Valley district. The productive area in the Turnbull sector is expected to be limited in extent and if this holds true Continental would hold practically all of the productive acreage.

Sunset Oil Co. is drilling another interesting wild cat in southern California and one that may bear watching during the next week or 10 days. This wildcat, 1 Baldwin in the Puente district in 11-2s-11w, is now drilling at 4,680 ft. A formation test made this week resulted in a recovery of 31 stands of gas-cut mud and a good gas blow. Plans are under way to land a water string and proceed with a further test during the next week. This wildcat is interesting because it drilled through a small amount of volcanic ash and found its present showing immediately below this intrusion. There were no developments of interest in the Dominguez field during the week although production of wells in the west-end town-lot section is gradually declining and approaching the pumping stage. There are at present three pumping wells in the area but the number will be greatly increased within the next few weeks. Some operators are having considerable difficulty securing pumping equipment and have been shopping around for good used engines. Tide Water Associated Oil Co. completed its first producing well in the Miocene at Inglewood during the current week and it looks good for at least 1,000 bbl. per day. Actual gage is not yet available but it is a good flowing well. In the Potrero field of Los Angeles Basin, Tide Water Associated Oil Co. recompleted 4 Cypress flowing 336 bbl. of clean oil and 700,000 cu. ft. of gas per day after redrilling and cleaning out the hole.

LOS ANGELES BASIN COMPLETIONS

Coyote East, Orange County: Hathaway Co. 4 Anaheim, 18-3s-9w, pumped 20 bbl., 18.3-gravity, 5 per cent cut, T.D. 3,340 ft., perf. 2,807-3,340 ft., recompleted after redrilling and cleaning out hole.
Del Valle, Los Angeles County: R. E. Havenstrite 8 Lincoln, 16-4n-17w, flowed 350 bbl., 29.5-gravity, 25 per cent cut, 400,000 cu ft. gas, 20/64-in. bean, pressures 195/950 lb., T.D. 6,104 ft., 80-mesh perf. 5,974-6,104 ft., completed in first Modelo zone of Miocene age 5,975-6,104 ft.
Long Beach, Los Angeles County: Dumm Brothers 12 Signal, 28-4s-12w, pumped 15 bbl., 24.1-gravity, 20 per cent cut, T.D. 5,140 ft., perf. 4,887-4,932 ft., completed in Brown zone of Pliocene age.
Torrance, Los Angeles County: Calokan Oil Co. 1 Stephens-Woodman, 30-4s-13w, pumped 45 bbl., 14-gravity, 12 per cent cut, T.D. 6,095 ft., P.B. 3,566 ft., perf. 3,356-3,450 ft., 3,521-66 ft., completed in equivalent of Ranger zone, conglomerate 6,010 ft.,

Nodular shale 5,838 ft., Del Amo zone, barren 5,405 ft., Terminal zone 3,764 ft., poker chip shale 3,660 ft., Miocene 3,648 ft., Ranger zone 3,380 ft.

First National Finance Corp. 1 Capital, 30-4s-13w, pumped 100 bbl., 16.1-gravity, 15 per cent cut, T.D. 3,675 ft., perf. 3,090-3,675 ft., completed in equivalent of Ranger zone.

Jergins Oil Co. 2-18 Dominguez, 4-4s-13w, dry at 4,110 ft., laminated shale 3,610 ft., Miocene 3,580 ft., logged 40 ft. of oil sand in interval 3,485-3,817 ft., balance wet gray sand.

Wilmington, Los Angeles County: Continental Dev. Corp. 18 Harbor, 33-4s-13w, pumped 175 bbl., 14.5-gravity, 1 per cent cut, T.D. 3,197 ft., perf. 2,892-3,193 ft., completed in Ranger zone of Miocene age.

Wilmith Pet. Co. 3 Harbor, 29-4s-13w, pumped 154 bbl., 15.8-gravity, 5 per cent cut, T.D. 3,700 ft., perf. 3,020-3,415 ft., completed in Ranger zone of Miocene age.

LOS ANGELES BASIN OUTPOSTS OR DEEP TESTS

Dominguez, Los Angeles County: Hileford Associates 1 Developers, 29-3s-13w, T.D. 7,301 ft. in oil sand tested wet twice, now repairing liner.

Clareborn Associates 1 Maginnis, 29-3s-13w, drilling 7,264 ft. in shale and sand, washed perfs. with oil, no kick, will clean out.

Decker and Associates 1 Frome, 29-3s-13w, drilling 7,280 ft. in oil sand, cemented 7-in. casing at 7,247 ft.

Hiles-Crawford and Associates 1 Willis, 29-3s-13w, tested wet 3 times at 7,253 ft., plugged to 7,233 ft., installed compressor, would not kick over, may redrill, elev. 35 ft.

Inglewood, Los Angeles County: R. R. Bush Oil Co. 1 Smith, 7-2s-14w, T.D. 8,673 ft. in sand and shale, P.B. 8,170 ft., Nodular shale 8,100 ft., located water below 8,400 ft., perf. 7,225-7,300 ft., swabbed water, elev. 185 ft.

Federal Oil Co. 3 Smith, 7-2s-14w, drilling in oil sand and shale 8,200 ft., completing.

Hogan Pet. 3-A Machado, 7-2s-14w, drilling 3,371 ft. in sand and shale.

Jergins Oil Co. 2 Howard, 7-2s-14w, drilling 7,471 ft. in sand and shale.

Standard 2-12 Vickers, 7-2s-14w, drilling 7,170 ft. in sand and shale.

Standard 2-13 Vickers, 7-2s-14w, drilling in sand 7,498 ft.

Texas 8 Smith, 7-2s-14w, drilling 8,400 ft. in oil sand, Nodular 7,840 ft., elev. 242 ft.

Associated 70 Vickers, 7-2s-14w, drilling 7,994 ft. in hard sand and shale, 7-in. casing cemented 7,765 ft., elev. 229 ft.

Associated 71 Vickers, 7-2s-14w, digging sump.

Associated 72 Vickers, 7-2s-14w, rig.

Potrero, Los Angeles County: Associated 5 Cypress, 34-2s-14w, rigged up.

Rosecrans, Los Angeles County: R. S. Lytle 2 Anderson, 1-3s-14w, drilling 9,461 ft. in sand, 13⅜-in. surface pipe froze and cemented 998 ft., Miocene 8,200 ft., small oil showing at 8,565 ft., nothing since, elev. 233 ft.

LOS ANGELES BASIN WILDCATS

La Mirada district, Orange County: Texas 1-A McNally, 22-3s-10w, drilling 7,671 ft. in sand, elev. 112 ft.

Manhattan Beach district, Los Angeles County: Dominguez Ext. Oil Co. 1 Sunset, 19-3s-14w, redrilled 5,926 ft., streaks oil sand, P.B. 5,877 ft., fishing tubing, elev. 135 ft.

Palos Verdes district, Los Angeles County: Newton Dev. Co. 1 P.V., 13-5s-15w, drilling 3,331 ft. in hard sand.

Puente district, Orange County: Sunset Oil Co. 1 Baldwin, 11-2s-11w, drilling 4,590 ft. in hard gray sand and black shale with streaks of conglomerate, Kraemer shale 3,888 ft.

Rio Hondo district, Los Angeles County: Potrero Oil Co. 1 Newman, 32-1s-11w, rig, hauled in some drilling equipment, located 1 mi. N of eastern tip of Montebello field.

Seal Beach, Orange County: South Basin Oil Co. 1 Heller, 6-5s-11w, drilling 1,032 ft. in sand, is joint test of South Basin Oil Co., Johnston Drilling Co., and Allied Pet. Co.

Whittier district, Los Angeles County: Continental Oil Co. 1 Turnbull, 13-2s-11w, drilling 3,407 ft. in sand and shale, formation test, packer 2,341 ft., recovered fresh water, formation test 2,884-3,068 ft., recovered 12 stands mud, 4 stands mud and water, and 43 stands fresh water; formation test 3,270-3,340 ft. recovered 1,700 ft. of 20-gravity oil, elev. 535 ft.

Los Nietos Valley Oil Co. 1 Los Nietos, 29-2s-11w, rig.

Appalachian Fields

(Continued from Page 63)

Gilmer County

Center district: Pittsburgh & West Virginia Gas Co. 7827 Lyal T. West, 430,000 cu. ft. gas, Maxton sand 1,838-93 ft., gas 1,863-78 ft., gas 1,951-54 ft., gas 1,961-68 ft., T.D. 1,970 ft., R.P. 275 lb.

Carnegie Natural Gas Co. 1557 J. W. Cunningham, small gas well, will abandon, first Salt 1,298-1,308 ft., Big lime 1,595-1,650 ft., Big Injun 1,650-1,747 ft., gas 1,683-88 ft., T.D. 1,767 ft.

Glenville district: Pittsburgh & West Virginia Gas Co. 7832 T. H. Shuman, small gas well, Maxton sand 1,478-94 ft., gas 1,478-82 ft., T.D. 1,905 ft.

Lincoln County

Jefferson district: Pridemore & Adkins 1 L. C. Egnor, drilled deeper, 636,000 cu. ft. gas, started deepening 2,242 ft., slate and shells 2,930-3,115 ft., gray shale 3,115-3,335 ft., brown shale 3,335-3,660 ft., gas 2,755 ft., 3,130 ft., 3,165 ft., 3,255 ft., 3,300 ft., 3,455 ft., 3,494 ft., 3,515 ft., show oil 3,660 ft., 9,000-lb. dentonite shot, T.D. 3,665 ft.

Putnam County

Curry district: E. J. Elkins et al 1 J. M. Chaney, 10,530 cu. ft. gas, shot, Big lime 1,446-1,631 ft., Big Injun 1,631-1,703 ft., Berea 2,144-73 ft., T.D. 2,182 ft.

United Fuel 5035 Floyd Mabe, 26,000 cu. ft. gas after acidizing, Big lime 1,704-1,866 ft., gas 1,795-1,804 ft., T.D. 1,866 ft., will abandon.

Ritchie County

Grant district: Reno Oil Co. 1 Sherman Robinson, 50,000 cu. ft. gas, Keener sand, T.D. 1,890 ft.

Murphy district: Homer Barker 1 W. C. Fordham, about ¼ bbl. in Squaw sand, will abandon, T.D. 1,929 ft.

Tyler County

Centerville district: Tyler Wood Oil & Gas Co. 1 D. D. Davis, 2 bbl. and 15,000 cu. ft. gas, Big Injun sand, T.D. 1,860 ft.

Upshur County

Banks district: Central Oil & Gas Co. 4 fee, 175,000 cu. ft. gas, Big Injun sand 1,347-78 ft., gas 1,374-79 ft., T.D. 1,478 ft.

Wetzel County

Grant district: South Penn 11 D. H. Cox, 6 bbl., Big Injun sand, T.D. 2,352 ft.

ORISKANY GAS FIELDS

Kanawha County

Elk district: Columbian Carbon Co. 1 W. B. Fogarty, 38,000 cu. ft. gas, Corniferous 4,900 ft., 5,009 ft., drilling 5,042 ft. and not shot.

Poca district: Columbian Carbon Co. 1 Venia Hagerty, 1,364,000 cu. ft. gas, before shot, Corniferous 5,040 ft., Oriskany 5,132 ft., drilling 5,211 ft.

DRILLING

Poca district: Columbian Carbon Co. 1 H. C. Jones, Corniferous 4,957 ft., Oriskany 5,078 ft.

Poca Fork Oil & Gas Co. 1 Siegle Moore, Corniferous 5,201 ft.

United Carbon Co. 1 J. S. Clendenin, Corniferous 5,010 ft.

Jackson County

Ravenswood district: Hayes Oil & Gas Co. 2 Estil Hill, 9,480,000 cu. ft. gas after shot, Oriskany 4,748 ft., T.D. 4,988 ft.

Spartan Gas Co. 1 Bess Boggess, 4,500,000 cu. ft. gas after shot, Oriskany 4,939 ft., T.D. 4,994 ft., R.P. 1,740 lb.

Ripley district: R. E. McCabe 1 R. L. and W. E. Fisher, 2,467,000 cu. ft. gas before shot, Corniferous lime 4,889 ft., Oriskany 5,013 ft., drilling 5,033 ft.

United Carbon Co. 1 F. F. Starcher, 747,000 cu. ft. gas, Corniferous lime 5,049 ft., Oriskany 5,158 ft., drilling and not shot 5,190 ft.

Washington district: Godfrey L. Cabot, Inc., 1 R. P. Shinn, 169,000 cu. ft. gas, before shot, Corniferous lime 4,991 ft., Oriskany 5,115 ft., drilling 5,189 ft.

DRILLING

Ravenswood district: Mullins Gas Co. et al 1 J. E. Sweezy, Corniferous 4,915 ft.

Ripley district: Godfrey L. Cabot, Inc., 20 Putnam Co., Corniferous 4,854 ft., Oriskany 4,968 ft.

United Carbon Co. 1 G. L. Cabot, Corniferous 5,010 ft., fishing 5⅜-in. casing 5,027 ft.

United Fuel 5029 J. B. Heilman, Corniferous 5,050 ft., 7-in. casing 5,067 ft.

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MICHIGAN OPERATIONS

First Dry Hole in Reed City; Monroe Shows in Roscommon

By OTTO C. PRESSPRICH

SAGINAW, Mich., Sept. 29.—Completions, paced by continuing rapid development of the state's biggest field at Reed City, which recorded its first dry hole after an unbroken series of 35 big wells, reached their peak for the year as summer ended officially last week in Michigan.

Osceola County's Reed City field, where seven additional wells with initial daily potential exceeding 15,000 bbl. were completed, in addition to the dry hole on the field's present eastern extremity, contributed the bulk to a completions report which listed 29 tests, 14 of which found oil while three were completed as gas wells rating initially in excess of 14,000,000 cu. ft. a day. Ten dry holes were recorded in eight counties and operators on two other wildcat locations, one in Alcona County, the other in Livingston, were listed as temporarily abandoned.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Arenac County	2	3,312	5,735
Bay County	2	324	5,855
Clare County	1	102	3,786
Osceola County	7	15,048	25,300
Van Buren County	2	270	2,579
Missaukee County	1	*8.58	1,423
Gas wells: Isabella County	2	*5.66	2,681
Dry holes	12	.....	30,813
Total	29	.....	78,172

*Million cu. ft.

Second Well in Sight in Roscommon County

Anticipations of new production in Roscommon County, where Eugene Hilliard drilled in a discovery well a few months ago which has produced more than 100,000 bbl. of crude, were improved as Sun Oil Co. tested an oil show in 1 Bauman, C N½ SW NE Section 29, Richland Township. Considerable gas pressure was also noted with the hole in the Monroe formation near 4,190 ft. Sun planned to swab and tube for a production test after having nearly abandoned the test, presumably on the basis of Pure Oil Co.'s experience with its Hilliard offset, which failed to show oil either in Dundee of Traverse and was listed as "dry and abandoned" at 4,313 ft. in Roscommon Township. Freeman Oil Co. 1 State, northwest of the discovery well, was ready for Traverse test below 3,000 ft.

Three of the seven Reed City field producer completions helped confirm expectations of expansion in the producing area. Production from the new wells, which increased to 40 the total of producing wells drilled in the field, ranging from 3,840 bbl. down to 840 bbl. a day initially. Beyond the first dry hole, Ohio Oil Co. 1 State, first test in Section 28 of Lincoln Township, is drilling one location north of the dry hole. This is an offset to a Gordon Oil Co.-Bolger Oil Co. well in Section 29, which rated the top in the week's new production.

Adams-Arenac prospects improved as the result of two new producers. Rayburn & Major 3 Kerr, southwest offset to a dry hole in Section 22, was rated for 1,680 bbl. a day natural. Ervin Major 1 Moore, south and west of the big wells in the north pool, produced at a rate only a few barrels less than the Kerr. Two other Adams field tests were completed dry and there were few hopes of production from Rayburn 1 Ostrosky, Section 22 deep test, drilled below 4,300 ft., about 1,500 ft. below the present oil stratum.

In Bay County two oil wells were completed within the 2,900-3,000-ft. level while Gulf Refining Co. continued tests of its plugged-back Bateson deep test and announced gages showed Salina gas output up to 6,000,000 cu. ft. a day from 7,850 ft.

During the week the state Conservation Department issued 17 drilling permits for locations in 13 counties, two each in Isabella, Clare, Osceola and Van Buren, one each in Montcalm, Gladwin, Allegan, Kent, Lake, Arenac, Oceana, St. Clair and Genesee. The additions to the permit list boosted the total for the year to 667.

MICHIGAN COMPLETIONS

Alcona County

Alcona Township: Arthur F. Pabst, trustee 1 Sayres, SE NW SW 20-28n-9e, wildcat, temporarily abandoned at 1,018 ft.

Arenac County

Adams Township: Don Rayburn and Ervin Major 3 Kerr, NE NE NE 22-19n-3e, 1,680 bbl., T.D. 2,865 ft.

Ervin Major 1 Moore, NW SW SE 22-19n-3e, 1,632 bbl., acid, after 80-bbl. flow in 30 hr., T.D. 2,870 ft.

Don Rayburn 2 Collins, SW NW NE 22-19n-3e, dry, T.D. 3,024 ft

Ervin Major 2 Spencer, NW SW SW 23-19n-3e, dry, T.D. 3,010 ft.

Bay County

Kawkawlin Township: Gulf Refining Co. 1 Whyte, SE NE SE 33-15n-4e, 122 bbl., acid, T.D. 2,946 ft.

Monitor Township: Chapman Oil Co. 2 Ruegsegger, NW NW NE 3-14n-4e, pumping 202 bbl., acid, T.D. 2,909 ft.

Clare County

Winterfield Township: Sun Oil Co A-8 State-Winterfield, C S½ SW SE 36-20n-6w, 102 bbl., acid, T.D. 3,786 ft.

Isabella County

Deerfield Township: W. E. Ross 1 Nelson, SW SE NW 19-14n-5w, 4,600,000 cu. ft. natural gas, T.D. 1,384 ft.

(Continued on Page 69)

NATIONAL BANK OF TULSA

TULSA, OKLAHOMA

Statement of Condition September 24, 1941

RESOURCES

Cash and Due from Banks	$40,272,352.62	
U. S. Government Securities	14,238,288.05	
Other Bonds and Warrants	3,722,337.62	$58,232,978.29
Loans and Discounts		20,199,664.99
Overdrafts		3,492.65
Income Receivable Accrued		118,824.25
Stock in Federal Reserve Bank		180,000.00
Bank Premises		2,807.499.92
Customers' Liability under Acceptances		4,300.80
TOTAL		$81,546,760.90

LIABILITIES

Deposits		$73,967,995.33
Acceptances Executed		4,300.80
Income Collected Not Earned		94,788.84
Reserve for Taxes, Interest, etc.		94,628.22
Reserve for Preferred Dividends		4,200.00
Capital—Preferred	$ 600,000.00	
Capital—Common	2,700,000.00	
Surplus	2,700,000.00	
Undivided Profits	1,380,847.71	7,380,847.71
TOTAL		$81,546,760.90

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Hawkins Takes the Lead As Area's Most Active Field

By D. H. STORMONT

DALLAS, Tex., Sept. 29.—With the completion of eight new producers, one more than the previous week, the Hawkins field has definitely replaced the big East Texas field in oil development. Only six completions were announced in the East Texas field and three of these were dry.

Equaling the number of completions, eight new locations were staked in the Hawkins field. Outstanding location is the 2-mile north outpost staked by E. L. Baker on the H. C. Webb tract in the Samuel McCullock Survey in the eastern part of Upshur County. No. 1 Webb has been spudded and is drilling below 2,432 ft. in the Pecan Gap chalk, which was topped at 2,394 ft. With an elevation of 286 ft., the test is reported 35 ft. higher in this formation than the Baggett 1 Rash, 1,200 ft. southeast, which was completed in 1937 in the Woodbine sand at 3,711-26 ft. However, this producer was later abandoned because of water trouble.

Two Wildcats Testing, Third Nears Pay

The B. F. Weekley 2-A Barron, reported last week promising oil production for the Groesbeck gas area of central Limestone County, is preparing to test a showing of oil in the Pettit lime. With 3 or 4 in. of oil on pits, 5½-in. casing has been set at 5,785 ft. in the lime and operator is drilling plug.

At the present time, operator plans to perforate casing opposite the Pettit section and treat with 4,000 gal. of acid and test again. If the wildcat fails to produce commercially from this section, it is planned to test progressively up the hole at the 4,600-ft., 4,300-ft., and 4,125-ft. levels. Although no tops have been announced, the 4,600-ft. section probably represents the lower Glen Rose, the 4,300-ft. section, the upper Glen Rose, and the 4,125-ft. section, the Paluxy sand.

No. 2-A Barron is 660 ft. out of the northeast corner of a 320-acre tract in the E. Mabry Survey and east of four gas wells in the Groesbeck area.

On the south side of the Willow Springs area in Gregg County, Roger Lacy 1 Horton-Dickson, Meredith Survey, is testing again. Casing has been gun perforated between 6,490-6,770 ft. After a 5,000-gal acid treatment, the test was estimated good for 8,000,000 cu. ft. of gas daily.

In the Pleasant Grove area of southwestern Rusk County, L. O. McMillan 1-A Pool, northwest corner of a 60-acre tract in George May Survey, has topped the Austin chalk at 3,890 ft. This is 50 ft. higher than McMillan's discovery, which topped the chalk at 3,930 ft. The 4,000-ft. Woodbine pay section should be encountered during the week.

Wildcat Test Staked in Delta County

Oil production from the Paluxy sand will be sought at a wildcat test in Delta County. The wildcat will be drilled by Talco Asphalt & Refining Co. at 1 W. P. Peek, 850 ft. from the north and 525 ft. from the west lines of a 100-acre lease in the W. Ewing Survey. No. 1 Peek is 2½ miles west of the town of Peerless in Hopkins County and 1,100 ft. north of a test drilled by Amerada in 1928, which encountered salt water in the Woodbine sand around 3,200 ft. Operator at 1 Peek expects the Paluxy sand around 4,750 ft.

EASTERN TEXAS COMPLETIONS

Wildcats

Anderson County: Cecil Stein 2 Southern Pine Lbr., M. Rogers Sur., 3 mi. NW Slocum, dry at 476 ft.

Henderson County: J. C. Cook Drlg. Co. 1 Smith, M. T. Equis Sur., 6 mi. NE Poyner, top Woodbine 4,818 ft., dry at 4,891 ft.

Navarro County: W. H. Clement 2 Eden, M. Shire Sur., 4 mi. S Corsicana, dry at 420 ft.

Smith County: C. E. West 1 Collier, J. M. Porcella Sur., 4 mi. E Troup, top Austin 3,615 ft., dry at 4,003 ft., old well drilled deeper.

East Texas Field

(1-hr. gage)

Longview, Gregg County: Selby Oil & Gas A-29 Snavely, W. Tyndale Sur., 54 bbl., 3,546-59 ft.

Tide Water 35 Castleberry, D. Sanches Sur., 40 bbl., 3,577-94 ft.

Kilgore, Gregg County: C. R. Starnes 40 Money, B. A. Vansickle Sur., top Austin 3,635 ft., Georgetown 4,057 ft., Paluxy 5,060 ft., dry at 5,473 ft.

C. R. Starnes 50 Money, B. A. Vansickle Sur., top Austin 3,521 ft., dry at 3,657 ft.

C. R. Starnes 54 Money, B. A. Vansickle Sur., top Austin 3,596 ft., dry at 3,720 ft.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: East Texas field	4	*162	14,522
Hawkins	8	2,725	38,698
Other fields	3	341	11,396
Dry holes: East Texas field	3	.....	12,850
Wildcats	4	.....	9,459
Total	22	.....	86,925

*1-hour gage.

Kilgore, Rusk County: Wheelock & Collins 24 Wells, M. Y'Barbo Sur., 30 bbl., 3,619-32 ft.

Joiner, Rusk County: Sinclair 75 Kinney, J. B. Cadena Sur., 38 bbl., perf. casing 3,646-52 ft., T.D. 3,737 ft.

Other Field Completions

Cayuga, Freestone County: Amerada 13 Beck, E. G. Rector Sur., 81 bbl. in 24 hr., ⅛-in. choke, perf. casing 4,020-28 ft., T.D. 4,062 ft.

Hawkins, Wood County: H. A. Groneman 1 Reese, Brewer Sur., 127 bbl. in 6 hr., ¼-in. choke, top Woodbine 4,285 ft., oil sand 4,372 ft., T.D. 4,801 ft.

Humble 1 Mt. Zion Baptist Church, Brewer Sur., 113 bbl. in 6 hr., top Austin 4,096 ft., Woodbine 4,416 ft., T.D. 4,825 ft.

Humble 1 Reese, Brewer Sur., 116 bbl. in 6 hr., ¼-in. choke, perf. casing 4,749-59 ft., 4,804-14 ft., 4,818-25 ft., T.D. 4,833 ft.

H. D. McDonald and R. Lacy 1 Sanders, Brewer Sur., 109 bbl. in 6 hr., ¼-in. choke, top Woodbine 4,329 ft., oil sand 4,490 ft., T.D. 4,845 ft.

R. Lacy 1 Snider, J. P. Moseley Sur., 99 bbl. in 2 hr., ¼-in. choke, perf. casing 4,520-4,730 ft., Austin faulted out, top Woodbine 4,249 ft., T.D. 4,798 ft.

C. L. McMahon 1 Pouncey, S. Castleberry Sur., 85 bbl. in 6 hr., ¼-in. choke, top Woodbine 4,360 ft., oil sand 4,426 ft., T.D. 4,710 ft.

Jim McMurray Prod. and Fred Birdsong 1 Holmes, Brewer Sur., 123 bbl. in 6 hr., ¼-in. choke, top Woodbine 4,350 ft., oil sand 4,518 ft., T.D. 4,831 ft.

Texas 2 Cobb, J. G. Heard Sur., 89 bbl. in 6 hr., ¼-in. choke, top Woodbine 4,568 ft., T.D. 4,855 ft.

Talco, Franklin County: Humble 14 Dawson, I. Pennington Sur., 69 bbl. in 5 hr., pumping, T.D. 4,325 ft.

Wortham, Limestone County: C. L. Brown 28 Boyd, McAnulty Sur., 10 bbl. in 24 hr., 75 per cent salt water, T.D. 3,009 ft.

EAST TEXAS ACTIVE WILDCATS

Anderson County: Roosth & Genecov 1 Saunders, 2,675 ft. from S and 6,900 ft. from W lines of J.

(Continued on Page 71)

Michigan Fields

(Continued from Page 68)

L. & S. Drilling Co. 1 Secord, SE SW NE 29-14-5w, dry, T.D. 1,323 ft.

Fremont Township: Belvidere Oil Co. 1 Riggle, NW SW SW 21-13n-5w, wildcat, 1,060,000 cu. ft. natural gas, T.D. 1,317 ft.

Livingston County

Genoa Township: Fisher-McCall Oil & Gas Co. et al 1 Herbst, SE SW NW 24-2n-5e, wildcat, temporarily abandoned at 1,207 ft.

Mecosta County

Fork Township: C. L. Maguire, Inc., and D. E. Hughes 1 Wood, C S½ SW SE 27-16n-7w, wildcat, dry, T.D. 3,796 ft.

Missaukee County

Riverside Township: Taggart Bros. Co. 31 Burkett-Pollington, C SW 15-21n-7w, 8,580,000 cu. ft. natural gas, T.D. 1,423 ft.

Montcalm County

Belvidere Township: Belvidere Oil Co. 2 Hillman, NW NE NE 18-12n-7w, dry, T.D. 1,318 ft.

Pine Township: Sun Oil Co. 1 Crawford, NE NE SE 13-11n-8w, wildcat, dry, T.D. 3,410 ft.

Oceana County

Crystal Township: American Drilling Co. 1 Davis, NE NW SW 8-16n-16w, wildcat, dry, T.D. 3,507 ft.

Osceola County

Lincoln Township: Gulf Refining Co. 1 Lindner, C S½ SE SE 19-18n-10w, 2,808 bbl., T.D. 3,642 ft.

Ohio Oil Co. 1 State, C S½ NW NW 28-18n-10w, dry, T.D. 3,593 ft.

Gordon Oil Co.-Bolger Oil Co. G-2 State, C N½ NE NE 29-18n-10w, 3,840 bbl., T.D. 3,547 ft.

Weber Oil Co. 1 Stedman, C N½ SW NW 29-18n-10w, 840 bbl., T.D. 3,626 ft.

Weber Oil Co. 2 Stedman, C S½ NE NE 30-18n-10w, 1,560 bbl., T.D. 3,623 ft.

Pure Oil Co. 2 Gingrich, C N½ SE SW 30-18n-10w, 1,200 bbl., T.D. 3,624 ft.

Gulf Refining Co. 1 Lomp, C S½ NW NW 32-18n-10w, 3,600 bbl., T.D. 3,623 ft.

Gulf Refining Co. 2 Lomp, C N½ NW NW 32-18n-10w, 1,200 bbl., T.D. 3,615 ft.

Roscommon County

Roscommon Township: Pure Oil Co. A-1 State, C S½ SW SW 35-21n-3w, dry, T.D. 4,313 ft.

Van Buren County

Bloomingdale Township: W. E. Dotson 2 Holdeman, SE NE NE 11-1s-14w, pumping 202 bbl., acid, T.D. 1,287 ft.

H. C. Williams 1 Kahl, NE NW SE 11-1s-14w, dry, after show of oil and acid treatment, T.D. 1,291 ft.

Earl G. Hartman 2 Allen, SW NW NW 12-1s-14w, pumping 70 bbl., acid, T.D. 1,292 ft.

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South Extension Well in Sand Hills Area Shows in Simpson

By D. H. STORMONT

MIDLAND, Tex., Sept. 29.—Completion attempts are now under way at Continental 1 Jones, Section 12, Block 3, H.&T.C. Survey, southwestern Crane County wildcat, which may open a new Ordovician pool or extend the 4-mile south extension area of the Sand Hills Ordovician pool. No. 1 Jones is 1½ miles south of the south extension area and, if completed for oil production, will open new territory for oil development.

The Ellenburger, Lower Ordovician, lime from which production is derived in the south extension area, had not been logged in drilling to 6,004 ft., total depth, but oil and a slight show of gas was encountered in the McKee and Sharp (Simpson, Middle Ordovician) sands.

A 30-minute drill-stem test from 5,700-5,763 ft. recovered 231 ft. of mud cut 30 per cent with oil and showing 120,000 cu. ft. of gas. Oil-stained sand was cored from 5,905-38 ft., part of which was highly saturated. Another core taken from 5,994-6,004 ft. returned finely crystalline dolomite, with light oil stains and slight porosity.

At the end of the week, operator was preparing to set 7-in. casing at 5,625 ft., above the first Simpson sand zone, to test that section. No. 1 Jones is 4½ miles north of the Abell pool in northern Pecos County, which produces from the Ellenburger lime and both upper and lower Simpson.

SUMMARY OF COMPLETIONS

Southern West Texas

	No.	Bbl.	Footage
Oil wells: Foster	2	6,845	8,691
Johnson	3	1,487	12,597
Keystone	5	1,493	16,358
North Cowden	2	1,229	10,060
Other fields	10	6,721	33,054
Dry holes: Fields	3	.....	16,496
Total	25	.....	97,256

Northern West Texas

	No.	Bbl.	Footage
Oil wells: Seminole	3	1,349	15,964
Slaughter	16	19,021	80,481
Wasson	9	3,633	46,848
Other fields	3	1,552	9,441
Dry holes: Fields	1	.....	1,751
Wildcats	3	.....	13,864
Total	35	.....	168,349

Texas Panhandle

	No.	Bbl.	Footage
Oil wells	16	3,495	47,567
Gas wells	2	*22.9	6,754
Total	18	.....	54,321

Southeast New Mexico

	No.	Bbl.	Footage
Oil wells	3	289	11,489
Dry holes	1	.....	5,001
Total	4	.....	16,490

*Million cu. ft.

Gulf 2-B Tubb to Test Sand Hills Link Area

The increased drilling program promised the Sand Hills link area, with the completion of Gulf 1-B Tubb for 6,905.52 bbl. daily, is already under way. This week Gulf staked location for 2-B Tubb in the NW SW Section 28, Block B-27, P.S.L. Survey, ¼ mile north of 1-B Tubb, the link well.

Almost 1 mile southeast of Gulf 1-A Tubb, discovery well in the Sand Hills Ordovician area on the south end of the Tubb pool, Humble has made location for 2-B Tubb, in the NE SW Section 19, Block B-27, P.S.L. Survey. No. 2-B Tubb is ½ mile southeast of Humble 1-B Tubb, completed as a gas well in the Tubb horizon of the lower Permian. However, this new test is scheduled to the Ordovician.

Crinoidal Section to Be Tested in Todd Outpost

Without testing the Ellenburger, Lower Ordovician, lime Amerada 1-C Todd, Section 15, Block 10, G.C.&S.F. Survey, has been plugged back from 7,143 to 6,650 ft. to test the crinoidal section of the Strawn lime. At the first of the week, 5½-in. casing was set at plugged-back depth in preparation for gun perforating the casing opposite the crinoidal section, producing horizon for the Todd deep, Strawn lime, field in central Crockett County. No. 1-C Todd is 2¾ miles west of production in the pool.

With elevation of 2,430 ft., the wildcat topped the Simpson at 6,645 ft.

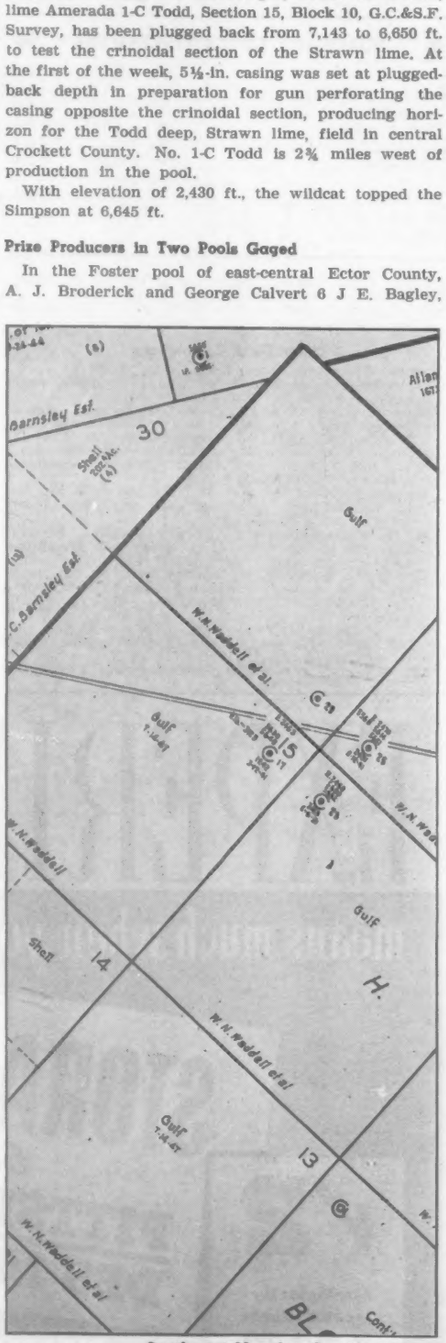
Prize Producers in Two Pools Gaged

In the Foster pool of east-central Ector County, A. J. Broderick and George Calvert 6 J E. Bagley, Section 17, Block 42, Township 2s, T.&P. Survey, rated a potential of 6,267 bbl. of oil daily, becoming by far the largest producer in the pool. Previously, the greatest potential recorded was 2,814 bbl. daily by Shell 7-A Witcher.

The potential was taken through 2-in. casing outlet with 125 ft. of gravel cavings and the bit in the hole. The well had been given a 350-qt. nitro shot from 4,235-4,355 ft.

In addition, 5 Calvert extended the pool one location south and will probably initiate increased development in that part of the area.

The second and largest producer for the Spencer pool of Ward County has been assured by Stanolind 1 Standard Oil Co., Section 68, Block 34, H.&T.C. Survey. Pay was logged at 2,935 ft. and 2-in. tubing set at 2,937 ft. Completed for 226 bbl. daily, engineers estimate that the well will make 600 bbl. in 24 hours.



Southwest Mapping Co., Fort Worth

The Sand Hills extension area which was linked to the main field by Gulf 1-B Tubb (at top) may be extended to the south by Continental 1 Jones which shows oil in the Simpson

SOUTHERN WEST TEXAS COMPLETIONS

(24-hr. ratings based on last 3 hr. of 6-hr. gage)

Fields

Abell, Pecos County: Phillips 1 Tex-Mex, elev. 2,392 ft., top Simpson 4,865 ft., Tulip Creek 4,895 ft., dry at 5,693 ft.

Stanolind 1 Rixse, elev. 2,394 ft., 693 bbl., 64 per cent water, ½-in. choke, base Permian 4,900 ft., Tulip Creek 5,070 ft., pay 5,397-5,416 ft.

Foster, Ector County: Broderick & Calvert 6 Bagley, elev. 2,952 ft., 6,367 bbl., 325-qt. shot, 4,235-4,352 ft., T.D. 4,356 ft.

Forest Dev. 1-B Moss, elev. 2,938 ft., dry at 4,372 ft.

Forest Dev. 1-F Moss, elev. 2,946 ft., 478 bbl., 750-qt. shot, 4,080-4,330 ft., T.D. 4,335 ft.

Goldsmith, Ector County: Grisham & Delaney 1 Cowden, elev. 3,305 ft., dry at 6,431 ft.

Hutchins, Ward County: Gulf 160 Hutchins, elev. 2,667 ft., 22 bbl., ¼-in. choke, 400-qt. shot, 2,990-3,095 ft., T.D. 3,100 ft.

Johnson, Ector County: Cities Service 3-A Johnson, elev. 2,962 ft., 234 bbl., 220-qt. shot, 4,124-4,212 ft.

Edward Kubat 3 Johnson, elev. 2,998 ft., 706 bbl., ¼-in. choke, 270-qt. shot, 4,040-4,140 ft.

T. P. Coal & Oil 4 Johnson, elev. 2,959 ft., 547 bbl., 510-qt. shot, 4,140-4,245 ft.

Keystone, Winkler County: Parker Drlg. 2 Ward, elev. 2,880 ft., 288 bbl., ½-in. choke, 440-qt. shot, 3,150-3,315 ft., T.D. 3,300 ft.

Peck & Croft 1 Campbell, elev. 2,881 ft., 320 bbl., 400-qt. shot, 3,195-3,322 ft., P.B. from 3,377 ft.

Phillips 7 McCabe, elev. 2,795 ft., 74 bbl., ¼-in. choke, 80-qt. shot, 2,911-43 ft., 65-qt. shot, 2,734-61 ft., T.D. 2,948 ft.

J. R. Sharp 4 Jenkins, elev. 2,976 ft., 254 bbl., ¾-in. choke, 360-qt. shot, 3,230-3,385 ft.

Standard 23-19 Baird, elev. 2,913 ft., 557 bbl., 320-qt. shot, 3,215-3,340 ft., T.D. 3,348 ft.

McCamey, Crane County: W. D. Fugat 1 Hughes, elev. 2,448 ft., old well drilled deeper, old T.D. 2,097 ft., 18 bbl., 75 per cent water, 200 gal. acid, T.D. 2,129 ft.

W. D. Fugat 2 Hughes, elev. 2,456 ft., old well drilled deeper, old T.D. 2,115 ft., 17 bbl., 30 per cent water, 2,100-30 ft.

Trebol 1 King, elev. 2,475 ft., old well worked over, old T.D. 2,166 ft., 16 bbl., 55 gal. acid, 2,035-2,166 ft.

McCamey, Upton County: Gilcrease Oil 10 Gibbs, elev. 2,553 ft, old well drilled deeper, old T.D. 2,267 ft., dry at 2,332 ft.

North Cowden, Ector County: Snowden & McSweeney 1 Holt, elev. 3,092 ft., 448 bbl., 390-qt. shot, 4,392-5,400 ft.

Texas 13 Holt, elev. 3,098 ft., 781 bbl., 500-qt. shot, 4,400-4,650 ft., T.D. 4,660 ft.

O'Brien, Ward County: Gulf 183 O'Brien, elev. 2,685 ft., 226 bbl., ½-in. choke, 370-qt. shot, 2,587-2,684 ft.

Pecos Valley, Ward County: Jamson & Pollard 3-B Texas Cotton, elev. 2,419 ft., 393 bbl., 9/64-in. choke, 1,902-25 ft.

Powell, Crockett County: Garrett M. Smith 1-D Powell, elev. 2,820 ft., 168 bbl., 1,000 gal. acid, 2,675-90 ft.

Sand Hills Ordovician, Crane County: American Liberty 13 Tubb, elev. 3,548 ft., 9,207 bbl., 2-in. casing outlet, 5,000 gal. acid, 5,149-83 ft.

Sealy, Ward County: Atlantic Ref. 3 Wickett-University, elev. 2,652 ft., 512 bbl., ⅝-in. choke, 2,914-21 ft.

Taylor-Link, Pecos County: J. D. Lancaster 1-32 University, 262 bbl., 18/64-in. choke, 455-qt. shot, 1,373-1,408 ft.

Todd deep, Crockett County: Continental 9-B Todd, elev. 2,511 ft., 784 bbl., 2-in. casing outlet, top crinoidal 5,561 ft., pay 5,620-5,784 ft.

White & Baker, Pecos County: Cardinal Oil 1-K White & Baker, 113 bbl., 120-qt. shot, 1,930-63 ft.

SOUTHERN WEST TEXAS ACTIVE WILDCATS

Brewster County: Chester Dewey 1 Decie, NE SE Sec. 39, Blk. A-2, G.H.&H. Sur., 3,000-ft. test, drilling 930 ft.

Crane County: Continental 1 E. B. Jones, 660 ft. from NE and NW lines Sec. 12, Blk. 3, H.&T.C. Sur., top Yates 1,380 ft., setting 7-in. casing at 5,625 ft.

Crockett County: Amerada 1-C Todd, SW SW Sec. 15, Blk. 10, G.C.&S.F. Sur., prepare to set 5½-in. casing at 6,636 ft., P.B. from 7,143 ft.

J. S. Pittman 1 Bouscaren, 467 ft. from N and W lines Sec. 29, Blk. HH, H.E.&W.T. Sur., 2,500-ft. test, drilling 500 ft., tight well.

Wilshire 1 Carter, 445 ft. from W and 1,267 ft. from S lines E 50 ac. of SW 100 ac. Sec. 27, Blk. GG, H.E.&W.T. Sur., running 7-in. casing at 1,192 ft.

Moore Bros. 1 Childress-Halff, 467 ft. from S and 1,400 ft. from E lines S½ Sec. 71½, Blk. GG, Owney Sur., first report.

El Paso County: J. S. Meriwether 1 Bobadilla, 660 ft. from N and W lines Scrap File 254, drilling 372 ft., first report.

Pecos County: J. L. Cooper 1 University, SE SE SE Sec. 13, Blk. 16, University Sur., first report.

Cardinal Oil 1-3 University, 1,715 ft. from N and 2,370 ft. from W lines Sec. 3, Blk. 17, University Sur., first report.

J. D. Lancaster 2-26 University, NE NE SE Sec. 26, Blk. 15, University Sur., 60-qt. shot 1,700-24 ft., 700 ft. fluid in hole after shot, cleaning out.
Reagan County: Amerada 1-RB University, NW NE Sec. 6, Blk. 48, University Land Sur., drilling 2,532 ft.
Amerada 1-RC University, SE NE Sec. 4, Blk. 48, University Sur., fishing cement retainer, P.B. to 2,678 ft.
Tom Green County: B. C. Mann 1 Metcalf, NW NW Sec. 672, W. Wochler Sur., 7,000-ft. test.
Upton County: Plymouth Oil 1 Alford, C Sec. 50, Blk. 12, P. B. Scott Sur., drilling 9,405 ft.
Ward County: Shell Oil 1 Sealy-Smith, NE NE SE Sec. 38, Blk. A, G.M.M.B.&A. Sur., Ordovician test, drilling 5,542 ft.
Winkler County: Magnolia 20 State-Walton, NW cor. Sec. 4, Blk. 3-B, P.S.L. Sur., set casing 8,338 ft.
Sam Weiner 1 Halley, NW NE Sec. 7, Blk. 11-B, P.S.L. Sur., S.I. 3,023 ft.

Dawson and Yoakum County Wildcats Running High

Two wildcats in this district were reported to be structurally high. The Dawson County wildcat being drilled by Ray Albaugh at 1 J. J. Handley, Section 36, Block M, E.L.&R. Survey, topped the Yates sand at 3,050 ft. and the frosted quartz sand at 3,060 ft. With an elevation of 3,086 ft., the markers are approximately 25 to 30 ft. higher than in Albaugh 1 Robinson, 1¼ miles west and south, which produced small amounts of oil from 1,936-37 ft., with total depth of 5,038 ft. On the anhydrite, logged at 2,215 ft., the wildcat was normal, and the high Yates section indicates a thinning of the section.

In Yoakum County, Honolulu Oil Corp. 1-13 Wright topped the Brown lime at 4,210 ft., indicating that the interval has been constant in the test. No. 1-13 Wright has been running much higher than S. C. Yingling 1 Barrier, dry hole to the southwest and only slightly lower than Texas 1 S. T. Murphy, a failure 2¼ miles northeast in Terry County.

No shows have been reported at 1-13 Wright and at last reports it was drilling ahead below 4,315 ft.

Mitchell County Wildcat Shows Light Oil

A thin section, which bled light green oil, was recovered from a core taken from 5,639-41 ft. at Humble 1 Elwood, scheduled 8,500-ft. wildcat in central Mitchell County. The oil-bearing lime was the bottom 6-in. of a 1½-ft. core, and showed only slight porosity. A second core from 5,643-50 ft. recovered only black shale.

At the end of the week, 1 Elwood was coring below 5,650 ft., having topped the San Angelo at 1,940 ft. and the Clear Fork at 2,130 ft. It is 1,980 ft. from the northeast and southeast lines of Section 49, Block 16, S.P. Survey.

Wildcat Staked in Howard County

The F. H. E. Oil Co. of Fort Worth has staked a 4,000-ft. wildcat test in Howard County. The wildcat is 1-B L. C. Denman and is ½ mile south and east of the Dodge-Denman pool. Location is in Section 14, Block 30, Township 1s, T.&P. Survey.

NORTHERN WEST TEXAS COMPLETIONS

(24-hr. ratings based on last 3 hr. of 6-hr. gage)

Wildcats

Dawson County: Stanolind 2 Scanlin, SE SE Sec. 87, Blk. M, E.L. Survey, elev. 3,145 ft., top Yates 2,900 ft., San Andres 4,510 ft., dry at 5,885 ft.
Howard County: Forest Dev. 1 Stewart, elev. 2,795 ft., dry at 1,547 ft.
Lynn County: George P. Livermore 1 Rice, NW NW Sec. 18, Blk. 11, E.L. Sur., Elev. 3,229 ft., top Yates 2,566 ft., San Andres 3,810 ft., Glorietta 5,030 ft., dry at 6,432 ft.

Fields

Cedar Lake, Gaines County: Stanolind 6-X Raynor, elev. 3,092 ft., 751 bbl., 790-qt. shot, 4,645-4,794 ft., T.D. 4,800 ft.
Chalk, Howard County: Enninbrook Oil 23 T. P. Lands, elev. 2,456 ft., 577 bbl., 860-qt. shot, 2,484-2,915 ft., 900 gal. acid, T.D. 2,925 ft.
Dockery-Robbins, Mitchell County: C. L. Echols 2-A Crawford, elev. 2,234 ft., 224 bbl., 440-qt. shot, 1,660-1,712 ft., T.D. 1,716 ft.
Magnolia 1 Rhodes, elev. 2,226 ft., dry at 1,751 ft.
Seminole, Gaines County: Amerada 7-A Matthews, elev. 3,433 ft., 788 bbl., ½-in. choke, 5,152-5,370 ft.
H. W. Bass 6 Austin, elev. 3,325 ft., 551 bbl., ½-in. choke, 252-qt. shot, 5,076-5,244 ft.
Magnolia 13-217 H. & J., elev. 3,385 ft., 18 bbl., 93 per cent water, 7,000 gal. acid, 5,326-35 ft., P.B. from 5,350 ft.
Slaughter, Cochran County: Anderson-Prichard 4 Woodley, elev. 3,679 ft., 599 bbl., 138-qt. shot, 4,990-5,020 ft., 10,000 gal. acid, 4,930-5,020 ft., T.D. 5,045 ft.
Atlantic 26 Boyd, elev. 3,670 ft., 1,209 bbl.. 10,000 gal. acid, 4,960-5,050 ft.
G. P. Livermore 10 Boyd, elev. 3,666 ft., 259 bbl., 12,000 gal. acid, 5,068-94 ft.
G. P. Livermore 11 Boyd, elev. 3,656 ft., 593 bbl., 2-in. casing outlet, 10,000 gal. acid, 5,058-80 ft.
Honolulu Oil 9-B Igoe-Smith, elev. 3,658 ft., 1,250 bbl., 10,000 gal. acid, 4,955-5,044 ft.
G. P. Livermore 19 Boyd, elev. 3,664 ft., 798 bbl., 10,000 gal. acid, 5,025-66 ft.
Slaughter, Hockley County: Magnolia 11-D Mallett, elev. 3,591 ft., 1,127 bbl., 3-in. casing outlet, 10,500 gal. acid, 4,932-98 ft.
Magnolia 12-J Mallett, elev. 3,615 ft., 1,203 bbl., 3-in. casing outlet, 10,500 gal. acid, 4,986-5,035 ft.
S. W. Richardson 13 Slaughter, elev. 3,565 ft., 1,509 bbl., 2-in. casing outlet, 10,000 gal. acid, 4,920-95 ft.
Texas 27 Slaughter, elev. 3,564 ft., 1,782 bbl., 10,000 gal. acid, 4,985-5,025 ft.
Texas 3 Slaughter, elev. 3,544 ft., 1,121 bbl., 16,000 gal. acid, 4,870-4,995 ft.
Texas 31 Slaughter, elev. 3,530 ft., 1,355 bbl., 10,500 gal. acid, 4,925-90 ft.
Texas 33 Slaughter, elev. 3,540 ft., 1,653 bbl., 10,000 gal. acid, 4,920-90 ft.
Tide Water 4 Lincoln, elev. 3,570 ft., 1,091 bbl., 14,000 gal. acid, 4,870-4,992 ft.
Western States 9-B Mallett, elev. 3,616 ft., 1,253 bbl., 11,000 gal. acid, 4,950-5,040 ft.
Slaughter, Terry County: George P. Livermore, elev. 3,535 ft., 2,219 bbl., 15,000 gal. acid, 5,001-42 ft.
Wasson, Gaines County: Continental 3-53 Wasson, elev. 3,562 ft., 193 bbl., ½-in. choke, 4,000 gal. acid, 4,850-4,940 ft.
Wasson, Yoakum County: Aloco Oil 6 Knight, elev. 3,713 ft., 290 bbl., ½-in. choke, 10,000 gal. acid, 4,950-5,313 ft.
Aloco Oil 11 Walker, elev. 3,664 ft., 160 bbl., 680-gt. shot, 4,955-5,240 ft., 2,650 gal. acid, P.B. from 5,464 ft.
Denver 1-A Whittenberg, elev. 3,619 ft., old well drilled deeper, old T.D. 5,084 ft., 821 bbl., 5,000 gal. acid, T.D. 5,168 ft.
Denver 2-A Whittenberg, elev. 3,605 ft., old well drilled deeper, old T.D. 5,070 ft., 1,093 bbl., 5,000 gal. acid, T.D. 5,172 ft.
Denver Prod. & Ref. 12-A Whittenberg, elev. 3,605 ft., 1,188 bbl., 10,000 gal. acid, 4,860-5,182 ft.
Drlg. & Exploration 1-C Hudson, elev. 3,644 ft., 420 bbl., 7/16-in. choke, 4,870-5,104 ft.
Drlg. & Exploration 2-A Handall, elev. 3,661 ft., 458 bbl., 9/16-in. choke, 7,000 gal. acid, 4,940-5,098 ft.
Gulf 6 Elliott, elev. 3,627 ft., 431 bbl., ¾-in. choke, 10,000 gal. acid, 5,197-5,217 ft.
Magnolia 9 Bennett, elev. 3,595 ft., 162 bbl., ½-in. choke, 5,000 gal. acid, 5,185-5,270 ft.
Plymouth Oil 4-A Bennett, elev. 3,583 ft., 331 bbl., 1⅝-in. choke, 8,500 gal. acid, 5,085-5,260 ft.

NORTHERN WEST TEXAS ACTIVE WILDCATS

Andrews County: Mascho Oil 1 Fisher, NE NE SE Sec. 16, Blk. 36-A, P.S.L. Sur., P.B. to 4,573 ft., 3,000 gal. acid, no results, retreated with 8,000 gal. acid, swabbed 2 bbl. per hr. for 6 hr., T.D. 4,604 ft.
Borden County: M. L. Richards 1 W. R. Dunn, SW NE Sec. 307, Blk. 97, H.&T.C. Sur., 3,200-ft. test, drilling 2,854 ft.
Crosby County: George Callihan and C. L. Waggoner 1 E. M. Wahlenmier, 460 ft. from N and E lines, Sec. 3, Blk. E-15, Waxahachie Tap Sur., 3,200-ft. test, drilling below 1,275 ft.
Dawson County: Ray Albaugh 1 Handley, SE SW Sec. 36, Blk. M, E.L. Sur., 5,250-ft. test, drilling below 4,035 ft.
Gaines County: Amon G. Carter 4-D Wasson, NW SE Sec. 50, Blk. AX, P.S.L. Sur., P.B. to 7,100 ft., swabbing, T.D. 11,108 ft.
Likins & Hall 1 Jones, SW NW Sec. 13, Blk. A-7, P.S.L. Sur., 7,200-ft. test, first report.
Garza County: Ed McAdams 1 K. Stoker, C NE Sec. 942, Blk. 97, H.&T.C. Sur., 3,500-ft. test, setting 7-in. casing at 2,865 ft., T.D.
Lynn County: Trinity Drlg. Co. 1 Dan Auld, SE SE Sec. 10, Blk. E, E.L. Sur., S.D.. orders, 5,202 ft.
Mitchell County: G. R. Anderson 1 Simpson, NE NE SE Sec. 65, Blk. 97, H.&T.C. Sur., drilling 1,606 ft.
Scurry County: Pearson & Sibert 1 Addison, SW SW SW Sec. 122, Blk. 25, H.&T.C. Sur., drilling 1,237 ft.
Yoakum County: Honolulu Oil 1-13 Wright, 467 ft. from N and W lines, Sec. 13, Blk. D. J. Gibson Sur., 5,500-ft. test, top Yates 3,250 ft., drilling 4,315 ft.
Shell 1 M. L. Hammer, SW SW SW Sec. 400, Blk. D. J. Gibson Sur., P.B. from 5,700 ft. to 5,351 ft., preparing to treat.

TEXAS PANHANDLE

AMARILLO, Tex., Sept. 29.—Returning to normal, the Texas Panhandle this week completed the average number of oil and gas producers. For the past few weeks, completions in the district have been abnormally high. A total of 18 wells were completed, 16 for oil and 2 for gas. The new oil completions had a total initial production of 3,495 bbl. and the gas wells a volume of 22,900,000 cu. ft. of gas.

New locations held to the high pace of the previous weeks, with the announcement of 40 new well permits granted. The new tests are divided up among five producing counties: Hutchinson County reported 17;

TEXAS PANHANDLE COMPLETIONS

(24-hr. gage)

Gray County

Gulf 3 Hughes-A, 129-3, I.&G.N. Sur., pumped 76 bbl. from 3,085-3,195 ft.
Kewanee Oil & Gas 15 Moore-A, 2-26, H.&G.N. Sur., pumped 101 bbl. from 2,890-2,981 ft.
Skelly Oil 1 Taylor, 24-B2, H.&G.N. Sur., pumped 400 bbl. from 2,890-2,981 ft.
Sloan Oil Co. 8 Pope, 173-3, I.&G.N. Sur., 215 bbl., pumping, from 3,180-3,290 ft.
Texas 1 "F" 37-B2, H.&G.N. Sur., pumped 454 bbl. from 2,850-3,067 ft.
Texwell Oil 2 Davidson, 65-B2, H.&G.N. Sur., pumped 30 bbl. from 2,970-3,067 ft.
Clayton & Dewyer 5 Lovett, 65-B2, H.&G.N. Sur., pumped 27 bbl. from 2,884-2,964 ft.
Clayton & Dewyer 6 Lovett, 36-B2, H.&G.N. Sur., pumped 64 bbl. from 2,882-2,940 ft.

Hutchinson County

Crosbie 44 Pitts, 7-M21, T.C. Sur., pumped 407 bbl. from 2,815-2,880 ft.
Danube Oil 3 Sanford, 78-46, H.&T.C. Sur., pumped 236 bbl. from 2,770-2,790 ft.
Stanolind 6 Moore, 21-M21, T.C. Sur., pumped 336 bbl. from 2,990-3,086 ft.
Stekol 7 Whittenburg-L, 21-47, H.&T.C. Sur., pumped 70 bbl. from 2,840-2,927 ft.
Texas 37 Pond, 1-M21, T.C. Sur., pumped 299 bbl. from 3,017-3,110 ft.
Travelers Oil 15 Halle-B, 16-L, E.L. Sur., 411 bbl., pumping, from 2,970-3,020 ft.
Holmes, Newblock et al 5 Moore, 125-4, I.&G.N. Sur., pumped 342 bbl. from 3,039-3,100 ft.

Moore County

Texoma Natural Gas 19-M Coon, 189-44, H.&T.C. Sur., 11,400,000 cu. ft. gas from 2,754-3,200 ft.
Texoma Natural Gas 4-G Kilgore, 16-44, H.&T.C. Sur., 11,500,000 cu. ft. gas from 3,385-3,489 ft., P.B from 3,554 ft.

Wheeler County

North Fork Oil 10 Jackson, 11-27, H.&T.C. Sur., 27 bbl. oil and 94 bbl. water from 2,188-2,229 ft.

Wildcats in Vacuum and Corbin Areas Showing Oil

HOBBS, N. M., Sept. 29.—Two prospective new pool openers in Lea County, J. W. Brown 1 State and Culbertson & Irwin 1 Wingfield, are testing in Southeast New Mexico.

The Culbertson & Irwin wildcat, located 4½ miles south of the Corbin area, NE NW 4-19s-33e, logged showing of oil and gas from 4,345 ft. and an increase in gas from 4,435-37 ft. The latter showing of gas was of sufficient pressure and volume to kick up tools, causing a minor fishing job. Tools were fished out and the test is drilling ahead below 4,437 ft. in lime. Gas is bubbling through several thousand feet of salt water encountered in an upper horizon. The wildcat is slated to drill to 5,000 ft. unless production is encountered at a shallower depth.

Acid Treatment Planned

J. W. Brown 1 State, Lea wildcat 8 miles north by east of the Vacuum pool, was reported ready to acidize with 5,000 gal. in third-stage treatment. Bottomed at 5,318 ft., plugged back from total depth of 5,507 ft., it has 2-in. tubing set at top of plug, with packer at 5,260 ft. Tubing is perforated from 5,302 to 5,317 ft.

Following initial acid treatment with 1,000 gal., 1 State was swabbed dry, then filled 100 ft. with fluid in 1 hour. A slight showing of oil and gas was present on fluid, the balance was circulating water and spent acid. After a second-stage treatment of 3,000 gal., the well was swabbed down and recovered 2 bbl. of fluid, 60 per cent oil, hourly. It then was shut in for 72 hours and at the end of that time had 2,000 ft. of fluid, mostly water, in the hole. Observers believe the well will attain commercial production after water has been exhausted by swabbing it. It is located in the center of Lot 11, 4-16s-35e.

SOUTHEAST NEW MEXICO COMPLETIONS

Wildcat, Lea County: Uscan & Marshall 1 Joe Cunningham, SW SW 22-19-35, dry in lime at 5,001 ft.
Maljamar, Lea County: Carper Drlg. Co. 5-A Simon, SW SW 29-17-32, flowed 85 bbl. in 2 hr., top pay 3,750 ft., T.D. 4,005 ft.
Maljamar, Eddy County: Emperor 12-A Puckett, NE SW 24-17-31, flowed 108 bbl. in 18 hr., top pay 3,915 ft., T.D. 3,934 ft., P.B. to 3,922 ft.
Grayburg, Eddy County: Repollo 5-A J. G. Keel, 7-17-34, pumped 96 bbl. oil and 28 bbl. water, 3,474-3,550 ft.

Eastern Texas Fields

(Continued from Page 69)

Ferguson Sur., old well drilling deeper, old T.D. 5,229 ft., P.B. to 4,890 ft., prep. to perf. casing.
Camp County: Talco Asphalt Co. 1 McKenzie, L. Williams Sur., ¾ mi. W of Pittsburg field, pumped 280 bbl. oil into casing, flowed 21 bbl. in 3 hr. through ¼-in. choke, T.D. 8,203 ft.
Delta County: Talco Asphalt & Refining 1 W. T. Peek, 850 ft. from N and 575 ft. from W lines 150-acre tract in Wm. Ewing Sur., derrick, first report.
Fannin County: H. W. English 1 Parkhurst, M. P. Davis Sur., 7 mi. W of Leonard, S.D. 1,100 ft., show of gas at 840 ft.
Freestone County: J. L. Collins & Co. 1 Steward, 1,400 ft. from W and 500 ft. from N lines 100-acre lease out of 241.6 and 220-acre tracts, J. James Sur., top Austin 2,367-3,622 ft., Woodbine 3,982 ft., S.D., orders, 4,051 ft.
Henderson County: British American 1 Young, J. Rice Sur., 7½ mi. SW of Athens, 3.5 bbl. per hr., 42 per cent oil, T.D. 8,474 ft.
Lone Star Gas 2 Allen, 3,490 ft. from W and 4,780 ft. from S lines J. Lawson Sur., drill-stem test at 8,512-54 ft., no oil, no water, T.D. 8,613 ft.
Hunt County: Cable Tool Drlg. 1 J. D. Williams, 467 ft. from E and 2,175 ft. from S lines Wm. Elam Sur., location, first report.
Limestone County: Farrell Drlg. 1 Gilliam, 1,536 ft. from NW and 1,426 ft. from NE lines Spence Sur., top Pettitt 3,610 ft., Travis Peak 3,740 ft., drilling 3,764 ft.
B. F. Weekly A-2 Barron, 660 ft. out of NE cor. 320-ac. tract in E. Mabry Sur., setting 5½-in. casing at 5,685 ft.
Red River County: Magnolia 1 Henry, 700 ft. from N and 640 ft. from W lines 100-ac. tract in M.E.P.&P. Sur., 13⅜-in. casing at 237 ft.
Smith County: Sun Oil B-1 Sanders, 648 ft. from N and 1,000 ft. from W lines 81.53-ac. tract Matthew Arnold Sur., testing at 8,241-62 ft.

South Extension to Unknown Pass Indicated by Show

By F. L. SINGLETON

NEW ORLEANS, La., Sept. 29.—A south extension to the Unknown Pass field, Orleans Parish, has been indicated by the showing of W. T. Burton 7 State in 18-11s-15e. Broken sand showing oil was cored at 8,981-97 ft., and on a 9-minute drill-stem test 1 bbl. of oil was recovered and working pressure built up to 225 lb. An electrical log showed broken sand at 9,886-92 ft., the total depth, with 2½ ohms resistivity on normal curve, 3 ohms on third curve and 2 ohms on the fourth curve. Very little is known about the producing sand section in view of the fact that the discovery well, W. T. Burton 1 L. & R. R. R. blew out from a total depth of 9,887 ft., and the well was completed with the drill stem in the hole. The well produced at the rate of 325 bbl. daily, but production has within the past few months shown a decline and it is reported to be making considerable salt water.

East Flank Test at Pine Prairie Limits Production

Pan American 1 Guillory, the most northeasterly well drilled on the east flank of the Pine Prairie dome, Evangeline Parish, was completed for an initial production of 275 bbl. of 39.5-gravity oil daily flowing through a 5/32-in. choke from perforated casing opposite oil sand at 8,310-40 ft. The completion opens an extension of about 600 ft., but production is limited in this direction in view of the fact that salt-water sand was cored in the regular sand in the original hole, and production was obtained by plugging back, sidetracking and redrilling closer into the dome.

On the southeast flank of the Starks field, Calcasieu Parish, W. T. Burton 4 Industrial Lumber Co. is bottomed in salt at 7,439 ft., and a production test is being made at 7,252-63 ft. Production from deeper sands around the flanks of the dome has been indicated, but thus far no commercial production has been developed.

New Sand at White Lake

A new producing sand for the White Lake field, Vermilion Parish, has been indicated by Union Oil Co. of California 1-9 School Board which tested 43 bbl. of 48-gravity oil on a drill-stem test at 8,155-66 ft., and the hole has been plugged back to test another sand at 6,900 ft.

In the Bayou de Allemands field, St. Charles Parish, Amerada Petroleum Corp. was making preparations to test 6 Gheens Land & Realty Co. Total depth of the hole is below 10,700 ft., and casing was cemented at 10,465 ft. This is the first activity reported in the field in several months, and if successfully completed, an extension of several hundred feet southwest would be recorded.

Southeast of the University field, East Baton Rouge Parish, Texas Progress Oil Co. is reported to be making preparations to start a wildcat on its block of several thousand acres centering in Township 8s-1w. A wildcat drilled in this area earlier in the year was abandoned, but encouraging showings were logged. Another wildcat in which drilling is scheduled to get under way in the near future was made by Stanolind Oil & Gas Co. in the Lewisburg area, Acadia Parish. The well is 1 G. T. Tweedel in 77-7s-3e.

Wildcat Locations

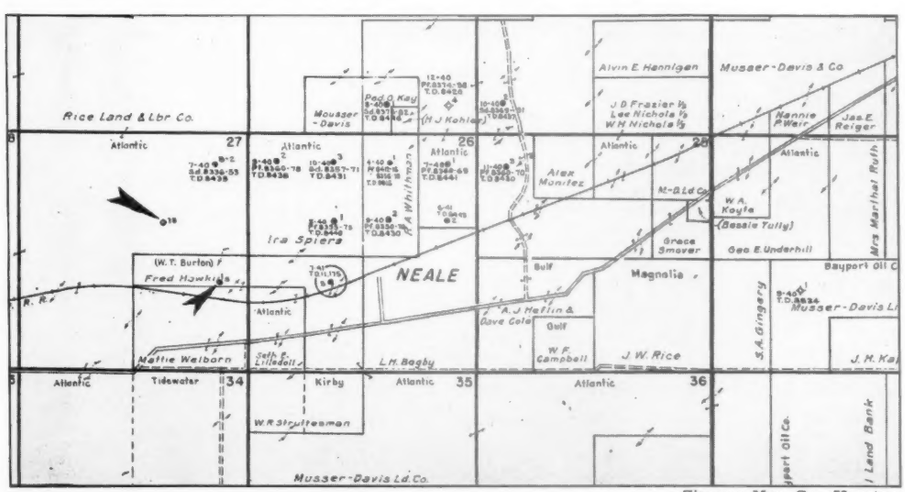
Locations for two wildcats are reported planned for the Moss Lake area, Calcasieu Parish, by the Pan American Production Co. and Union Sulphur Co. Both locations are to be drilled east of Pan American 1 Louisiana Farms & Livestock Co., which was recently abandoned. A number of wildcats have been drilled in the area and while encouraging showings have been logged, no commercial production was ever developed.

On the south flank of the Welsh dome, Jefferson Davis Parish, Union Sulphur Co. is slated to test 1 Arceneaux which showed promise of opening a new and deeper sand for the structure. Total depth of the hole is 7,449 ft., and 7-in. casing was cemented at 6,241 ft. This well attempted to blow out after topping sand at 7,476 ft. An electrical log also showed gas sand at 6,864-90 ft., and shaly gas sand at 6,896-6,902 ft., and 6,939-44 ft.

High tides which accompanied Tuesday night's storm continue to retard operations, and it will be several days before normal operations are resumed.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	8	2,585	68,915
Dry holes: Fields	3	.....	21,010
Wildcats	2	.....	20,231
Total	13	.....	110,156



Zingery Map Co., Houston

Plat of the Neale field, Beauregard Parish, showing Atlantic 5 Musser-Davis, circled, which was completed several months ago in the lower Wilcox, and two wells, shown by arrows, which are nearing the new pay

LOUISIANA GULF COAST COMPLETIONS

Wildcats

Iberia Parish: Plymouth 1 Big Pigeon, dry, T.D. 11,898 ft.

St. Helena Parish: Humble 1-C Great Southern Lumber Co., dry, T.D. 8,335 ft.

Fields

Anse La Butte, St. Martin Parish: Crosby Drilling Co. 5 Republic Prod. Co., 234 bbl., 9/64-in. choke, perf. casing 4,782-85 ft., T.D. 4,792 ft.

Stanolind 7 Bergeron, 211 bbl., 9/64-in. choke, T.D. 6,352 ft., P.B., T.D. 6,210 ft.

Dog Lake, Terrebonne Parish: Texas 12 State, dry, T.D. 7,166 ft.

Gueydan, Vermilion Parish: Pure 9 Alliance Trust Co., 256 bbl., 9/64-in. choke, perf. casing 9,812-80 ft., T.D. 9,890 ft.

Grand Bay, Plaquemines Parish: Gulf 15-A Grand Prairie Levee District, 357 bbl., 5/32-in. choke, perf. casing 9,983-10,003 ft., T.D. 10,004 ft.

Jennings, Acadia Parish: D. D. Feldman 9 McFarland, 740 bbl., ¼-in. choke, perf. casing 7,224-54 ft., T.D. 7,290 ft.

Richie, Acadia Parish: Vincent & Welsh 3-A McManus, dry, T.D. 3,524 ft.

Ville Platte, Evangeline Parish: Continental 1 Evangeline Securities, 290 bbl., 12/64-in. choke, perf. casing 9,952-82 ft., T.D. 10,209 ft.

Continental 2 B. G. Fontenot, 228 bbl., 12/64-in. choke, perf. casing 9,898-9,938 ft., T.D. 10,166 ft.

Continental 10 W. L. Tate, 269 bbl., 12/64-in. choke, perf. casing 10,060-72 ft., T.D. 10,212 ft.

Oil Investments Co. 1-A Forest, dry, T.D. 10,320 ft.

Oklahoma Fields

(Continued from Page 57)

Williams 1 Steinman, NE NW NW 17-16-10, Bartlesville 2,360 ft., T.D. 2,480 ft. in Bartlesville, S.D. for 6-in. pipe.

Grant County: Texas 1 Breinholt, E½ NW SW 36-25-3w, S.D. 5,156 ft., in Mississippian lime.

Champlin 1-A Crouse, S½ SE SW 29-26-8w, drilling 5,905 ft., in Mississippian.

Hughes County: H. G. Marshall 1 Neff, W½ SW SE 27-5-10, first report.

Bailey 1 N. Williams, SW SW NE 14-9-10, T.D. 3,703 ft., show oil 3,698 ft., filled up 100 ft. oil in hole in 12 hr., underreaming 6-in. 3,600 ft.

Kay County: McKnabb 1 School Land, SE SE SW 13-27-2, drilling 725 ft.

Lincoln County: Mid-Continent 1 Evans, SW SE NW 31-14-6, 7-in. 4,659 ft., perf. 4,546-65 ft., acid, swabbed 3 bbl. oil and 9 bbl. water an hour, testing.

Allied Materials 2 Peck, NE SE NW 35-14-6, drilling 3,690 ft.

Fred Haddock 1 Hert, SW NE SE 22-17-3, Layton 2,970 ft., Checkerboard 3,190 ft., Cleveland 3,210-40 ft., Oswego 3,675 ft., Skinner 3,935 ft., cored saturated sand 3,938-53 ft., pink lime 3,980 ft., cored buff porous soft sand 4,006-24 ft., good gas odor, salty taste, base of Bartlesville 4,071 ft., Mississippian lime 4,227 ft., drilling 4,327 ft.

Logan County: Magnolia 1 Patterson, NW SE NW 29-15-1w, Layton 4,590 ft., Checkerboard 4,623 ft., Cleveland 4,835 ft., Oswego 5,214 ft., drilling 5,290 ft.

Harry Miller 1 Katschor, NE SW 7-16-2w, 18 ft. of hard section which started at 5,781 ft., drilling 5,799 ft. in same hard section which may be second Wilcox.

Muskogee County: Pine 1 Lacey & Steel, SE NE NW 25-13-17, drilling 2,382 ft. in Hunton with some show oil.

Okfuskee County: Shell 1 Palmer, SW NW SW 6-10-9, T.D. 4,215 ft., P.B. 3,740 ft., perf. Cromwell 3,412-16 ft., gaged 1,250,000 cu. ft. gas and flowed 1 bbl. water an hr., to perf.

Helmerich & Payne 1-A Williams, NW NW SE 16-11-9, Earlsboro 2,455-95 ft., dry, Inola 2,640 ft., Gilcrease 3,195-3,273 ft., Wapanucka 3,438 ft., cored hard limy conglomerate 3,441-51 ft., drilling ahead.

W. H. Allen 1 Camp, SE NE SW 18-11-9, drilling 875 ft.

John Droppleman 1 Yahola, NE NE SW 15-11-10, Bromide lime 2,418 ft., Gilcrease 2,742-67 ft., drilling 3,045 ft.

Beal & Le Vieux 1-A Allen, NE SW NE 14-13-9, Bartlesville 2,555 ft., show oil and water, 10-in. 2,030 ft., drilling 2,630 ft.

Osage County: Devonian 1-A Osage, SW SW NE 16-23-9, drilling 2,833 ft., to test Arbuckle.

Black Jack 1 Osage, NE NE SW 29-25-7, Oswego 2,272-2,350 ft., Mississippian 2,747 ft., S.D.

Pontotoc County: Blackwell 1 Riddle, NW NW NE 9-3-5, sand 857-72 ft., show oil, base conglomerate 1,040 ft., Mississippian Caney 1,350 ft., T.D. 1,540 ft., electrical log, 6-in. 1,020 ft., to perf. 857-92 ft.

Bob Mimnick 1 Adcock, SE NW NE 21-4-6, drilling 1,485 ft.

Pottawatomie County: Jenkins 1 Littner, NE NE NW 4-5-3, first report.

Arab 1 Trausdale, NE NE NW 31-7-3, Viola 4,910 ft., Bromide 3,010 ft., McLish 5,155 ft., second Wilcox or first Bromide sand 5,240 ft., T.D. 5,266 ft., to run electrical log.

Seminole County: Tate 1-B Fleets-Osborn, SE SW NE 11-6-7, T.D. 1,500 ft., P.B. 1,488 ft., perf. Calvin 1,478-88 ft., est. 30 bbl. oil a day, cleaning out and swabbing.

Donmar Oil 1 Smith, SE SE NE 29-8-6, first Wilcox 4,590 ft., electrical log, 4-in. 4,400 ft., to perf. and test Hunton.

Cummings 1 Buener, NE NE NE 29-9-7, drilling 2,370 ft.

Keener 1 Homestake, SW SW NW 28-7-7, T.D. 2,164 ft., P.B. 2,138 ft., shot 2,130-38 ft., swabbing 50 bbl. oil a day.

Stanolind-Amerada 1 J. F. Buck, NW SE NW 11-10-7, T.D. 4,415 ft. in Wilcox, bailed and swabbed 3 bbl. oil and 10 gal. water an hr., to shoot, 5½-in. 4,335 ft.

Barnsdall 1 Baker, NE SE NE 29-11-8, T.D. 4,284 ft. in sand, electrical log, showed possible oil in Cromwell 3,509-63 ft., Deep Rock took over to set 5½-in. at 3,581 ft. and test.

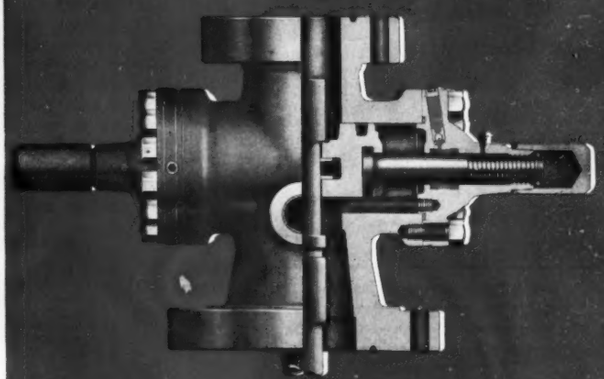
HOW DOES YOUR COMPLETION EQUIPMENT "Rate" ON THESE 5 IMPORTANT POINTS?

A Cameron Type "LD" Ram-Type Tubing Control Head on a Cameron Safety Xmas Tree installed on a high pressure discovery well in the Louisiana Gulf Coast.

CAMERON	OTHER MAKE	
Yes		Does it provide dependable protection against blowouts during every step of the completion operations?
Yes		Does it give you the choice of four proven methods of suspending and sealing the tubing string?
Yes		Does it obviate the need of a cement retainer when making a squeeze job?
Yes		Does it facilitate reworking the well subsequent to original completion without killing?
Yes		Does the manufacturer provide the services of an experienced operator to instruct your production department in the proper installation of the equipment?

This Cameron service available in all domestic fields where a factory representative is maintained.

CAMERON TYPE "LD" RAM-TYPE TUBING CONTROL HEAD



The above cross-section view of a Cameron Type "LD" Ram-Type Tubing Control Head illustrates the hanger nipple type of suspension and seal.

Three additional types of tubing suspension and seal are available: (1) Slip suspension from the top flange of the control head; (2) a bell-weevil hanger assembly which fits the top of the control head; and (3) a threaded hanger flange which bolts down on top of the control head. With each of these three additional types of tubing suspension, the rams of the control head are utilized as a master gate below the outlets to seal the annular space between the tubing and oil string.

The accompanying cross-section view of a Cameron Type "LD" Ram-Type Tubing Control Head clearly illustrates the mechanical features which make it an unparalleled achievement in the field of completion control equipment. Its rams, like those of the regular Cameron Blowout Preventers, are equipped with patented *Cameron Self-Feeding Ram Packing Elements* which assure a positive, pressure-tight seal and permit sustained pipe movement under pressure. From the moment the tubing string is started in the hole, the rams provide quick, dependable protection against loss of control. In most instances, no additional control equipment is required during drilling-in operations. Safely repackable plastic packing seals are provided around each ram thrust screw. In order that the unit may be operated with ease against the highest well pressures, a by-pass port is provided on the lower side of the rams which allows the pressures on the front and back faces of the rams to equalize.

The Cameron Type "LD" Ram-Type Tubing Control Head is a vital link in the Cameron Closed Pressure Method of Drilling and Completion. A comprehensive booklet has been prepared on this subject and will be gladly sent to interested operators on request.

CAMERON IRON WORKS, INC.

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NORTH CENTRAL TEXAS

Deep Montague County Well Shows in Conglomerate

By D. H. STORMONT

WICHITA FALLS, Tex., Sept. 29.—Completion attempts at Walter H. Gant and Continental 1 John Turner may result in a new deep oil pool for the Montague County portion of the Fort Worth basin. Saturated conglomerate was drilled last month at 6,223-38 ft. but a delayed delivery of casing for testing forced operators to shut down.

At the end of the week, plug had been drilled from the 7-in. casing set at 6,221 ft. on top of the conglomerate and the wildcat was bailing oil heavily cut with mud below 2,300 ft. to test the saturated section. The hole is reported to have filled 700 ft. with oil, cut with mud, during a 15-minute interval between bailing operations.

● SUMMARY OF COMPLETIONS ●

North Texas

	No.	Bbl.	Footage
Oil wells: K.M.A.	6	3,720	25,267
T.C.U.	2	37	2,291
Walnut Bend	2	323	9,789
Other fields	2	1,022	9,165
Miscellaneous pools	20	1,561	33,520
Wildcats	1	300	5,029
Dry holes: K.M.A.	2	.....	2,792
Other fields	1	.....	4,386
Miscellaneous pools	11	.....	14,682
Wildcats	6	.....	16,309
Total	53	.....	123,230

West Central Texas

	No.	Bbl.	Footage
Oil wells: Akard	2	167	4,322
Cook	2	152	2,532
Sayles	2	137	3,849
Other fields	3	414	5,445
Gas wells: Fields	1	*2.7	3,545
Dry holes: Fields	1	.....	2,407
Miscellaneous pools	1	.....	3,306
Wildcats	1	.....	784
Total	13	.....	26,190

*Million cu. ft.

No. 1 Turner is ¼ mile southeast of a 7,334-ft. failure drilled by the same operators at 1 Brown. Several oil shows were encountered in drilling the failure but prolonged completion attempts were never successful.

The prospective pool opener is 6 miles north of Bowie in Block 59, E.T. Survey, in the southwestern part of the county.

Testing of Caddo Lime Prospect Delayed

Slight caving in the hole has delayed testing of Taubert & McKee 1 Hoefle, which encountered saturated Caddo lime during drilling. The saturated section was logged at 4,818 ft. and a core from 4,825-35 ft. recovered 2 ft. of highly porous saturated Caddo lime. Two drill-stem tests were attempted but operators were unable to get the tester closer than 30 ft. to the bottom of the hole. Operators plan to condition the hole and make another effort to test the lime.

Taubert & McKee took the wildcat from R. A. Conkling et al who started the test and drilled to 3,128 ft. No. 1 Hoefle is in the A. James Survey, Abstract 318, in Jack County, and is 5 miles northeast of a 5,300-ft. Mississippi lime discovery completed last month by Alma Oil Co. and is the same distance southeast of another deep test being drilled by L. T. Burns.

New Pool in Cooke County Due Outpost Program

The new pool in Cooke County, 7 miles east of Gainesville, which was opened by John Gray and Burk Royalty at 1 Wilson (Ware), W. W. Crisp Survey, is set for an outpost drilling program. One test is already drilling and two others have been staked.

Over 1 mile northeast of the discovery, J. L. Anderson is drilling below 500 ft. at 1 A. L. Osburn, B. Sullivan Survey. Location is 330 ft. from the east and 990 ft. from the south lines of a 100-acre lease.

A mile east of 1 Wilson, location has been made for Kimbell & Bohner 1 P. Hermann in the C. Collingsworth Survey. The third test in the area is Kerlyn Oil Co. 1 R. A. Belsher, on a 51.5-acre lease in the W. W. Crisp Survey. No. 1 Belsher is about 800 ft. south of the discovery well.

New Wildcat Staked in Wilbarger County

Fifteen miles southwest of Electra in Wilbarger County, R. Robertson has staked location for 1 W. T. Waggoner estate. The wildcat is contracted to 2,450 ft. and is located 1,643 ft. from the south and 467 ft. from the east lines of a 160-acre tract in Section 5, Block 5, H.&T.C. Survey.

Drilling Campaign Expected for New Area Opened in Young County

With the definite assurance of a new shallow pool in the area northwest of Eliasville in Young County, a marked increase in the drilling program for that section of the county is expected. The new pool was opened by Panhandle Refining Co. 1 Allar-Hunt, Section 3409, T.E.&L. Survey, which flowed 275 bbl. of oil in 24 hours from an oil sand encountered at 2,706-12 ft. Nearest production is that of Nash & Windfohr on the Allar Co. tract, 2 miles east. However, the Nash-Windfohr production comes from the Caddo and Marble Falls formations.

Panhandle Refining Co. has already started an investigation of the area surrounding their discovery, by spudding 1 Harrell, 934 ft. north of 1 Allar-Hunt. Location of 1 Harrell is 467 ft. from the south and east lines of the N. S. Smith Survey 254.

NORTH TEXAS COMPLETIONS

Wildcats

Clay County: E. C. Harlin 1 Kuhn, Blk. 46, Specht-McCutchen Sur., dry at 1,350 ft

Cooke County: Falls Ref. 1 Epps, E. Langford Sur. A-566, dry at 1,668 ft.

Paul Stevenson 1 Donald, T. B. Hardwick Sur. A-1599, 5½-in. casing at 2,170 ft., dry at 2,929 ft.

Denton County: Jones Drlg. and D. S. Hager 1 Waide, J. Pearson Sur. A-1050, dry at 1,939 ft., old well worked over.

Wichita County: Northern Drlg. 1 Roller, C.T. Sur. A-438, dry at 457 ft.

Young County: L. T. Burns 1 Ragland, Sec. 254, T.E.&L. Sur., 20 bbl. oil and 7 bbl. water in 1 hr., est. 300 bbl., ¼-in. choke, 2,000 gal. acid, top Caddo 3,970 ft., Mississippi 4,872 ft., pay 3,970-4,052 ft., P.B. from 5,029 ft.

L. T. Burns 1 Jeffery, Sec. 47, T.E.&L. Sur., top Caddo 4,145 ft., Mississippi 4,881 ft., dry at 4,985 ft.

Tom B. Medders 1 Daws, Sec. 750, T.E.&L. Sur. A-755, top Caddo 3,866 ft., Mississippi 4,646 ft., Ellenburger 4,818 ft., dry at 4,920 ft.

Fields

Coleman, Archer County: Shell 3 Coleman "A," Sec. 74, Lot 3, 872 bbl. in 24 hr., 2,000 gal. acid, top Caddo 5,068 ft., oil shows 5,071-90 ft., 5,105-30 ft., 5,161-70 ft.

Fargo, Wilbarger County: Edward Kubat 1 Sears, Sec. 37, Blk. 15, H.&T.C. Sur., 61 bbl. in 5 hr., ½-in. choke, est. 150 bbl., perf. casing 3,979-95 ft.

Kadane, Archer County: Jack Kadane 1 Griffin, C. White Sur. A-918, top K.M.A. 4,060 ft., dry at 4,386 ft.

K.M.A., Wichita County: Hanlon-Buchanan 6 Burnett "A," Sec. 34, H.&G.N. Sur. A-435, dry at 922 ft.

George Cooper 60 Waggoner, Sec. 14, M. A. Willis Sur. A-548, top Gunsight 1,870 ft., dry at 1,874 ft.

Hammon, Hanlon & Buchanan 49 Fassett & Tuttle, Sec. 1, E.T. Sur. A-76, 70 bbl. in 3 hr., ¾-in. choke, est. 350 bbl., top K.M.A. 3,812 ft., 120-qt. shot 3,954-80 ft.

Shell and Phillips 31-Ellb. Griffin, J. Jordan Sur. A-167, 323 bbl. in 3 hr., ¾-in. choke, est. 890 bbl., top Ellenburger 4,343 ft., 7,000 gal. acid, 4,343-4,415 ft.

Lincoln & Moore 7 Bradley, Holloway Sur., 60 bbl. in 3 hr., ¾-in. choke, est. 290 bbl., 260-qt. shot, 3,760-3,860 ft.

Tide Water and Perkins-Cullum 6 Ellb. Pettit, Sec. 27, Blk. 7, H.&T.C. Sur., 186 bbl. in 3 hr., ¾-in. choke, est. 690 bbl., top Ellenburger 4,289 ft., pay 4,289-4,400 ft.

Venmex Oil 4-Ellb. Big Wichita River Bed, Wichita River, 170 bbl. in 3 hr., 1-in. choke, est. 650 bbl., 2,000 gal. acid, top K.M.A. 3,627 ft., Ellenburger 4,230 ft., pay 4,233-38 ft.

Shell and Phillips 33-Ellb. Griffin, F. Jordan Sur. A-33, 320 bbl. in 3 hr., ¾-in. choke, est. 850 bbl., 2,000 gal. acid, top Ellenburger 4,192 ft., pay 4,192-4,374 ft.

T.C.U., Cooke County: E. W. Mudge 4 Pette, Charles Carter Sur. A-1190, 20 bbl. in 24 hr., pumping, 1,104-17 ft.

Dodson & Iglehart 4 Rossor, B.B.B.&C. Sur. A-146, 17 bbl. in 24 hr., pumping, 1,068-74 ft.

Walnut Bend, Cooke County: Sinclair Prairie 12 Ramsey, C. Furinash Sur. A-369, 35 bbl. in 4½ hr., est. 125 bbl., 4,877-87 ft.

Cox & Hammon 14 Neu "B," B.B.B.&C. Sur. A-180, 198 bbl. in 24 hr., perf. casing 4,800-26 ft., P.B. from 4,902 ft.

Miscellaneous Pools

Archer County: Shappell Oil 25 Bell, Sec. 27, Blk. 5, Clark & Plumb Sur., 15 bbl. in 24 hr., pumping, 998-1,006 ft.

F. W. Palmer 12 Richardson, Sec. 11, Thomas McCoy Sur. A-269, 10 bbl. in 24 hr., pumping, 1,174-84 ft.

White & Duncan 1 King, Sec. 24, J. Scott Sur., dry at 1,239 ft.

Young & Brenhard 4 Morrison, Sec. 2403, T.E.&L. Sur., 20 bbl. in 24 hr., pumping, 1,290-96 ft.

Rancho Oil 1 Prideaux, J. Dorsey Sur. A-122, top Gunsight lime 525 ft., dry at 699 ft.

Baylor County: British American Oil 1 First Natl. Bank of Fort Worth, Sec. 197, T.&N.O. Sur., 55 bbl. oil and 10 bbl. water in 10 hr., est. 90 bbl., 2,000 gal. acid, 2,533-35 ft.

Clay County: Staley Oil 1 Hamilton, Sec. 83, Byers Bros. subd., 75 bbl. in 24 hr., pumping, 1,123-31 ft.

Sussex Oil 7 Hamilton, Sec. 83, Byers Bros. subd., 65 bbl., in 24 hr., pumping, 1,120-30 ft.

C. Y. Gorman 10 Taylor, Sec. 40, Bacon's subd., 23 bbl. in 24 hr., pumping, 1,110-34 ft.

George G. Golden 3 Byers, Blk. 49, Storey Sur. A-419, dry at 1,198 ft.

Metzner & Burns 16 Taylor, B.B.B.&C. Sur. A-67, dry at 364 ft.

Harper & Knappenberger 4 Bilbrey, Sec. 3, W. Wyatt subd., 48 bbl. in 24 hr., pumping, 1,147-68 ft.

Cooke County: Bridwell Oil 15 Flusche "B," J. Clark Sur. A-194, 15 bbl in 24 hr., 778-88 ft.

Trumter Oil 20 Andrews "B," J. Clark Sur. A-194, 7 bbl. oil and 5 bbl. water in 24 hr., 793-800 ft.

Denton County: Harvey Bros. and Reed 5 Knox, R. Howard Sur. A-542, old well working over, old T.D. 1,540 ft., perf. casing 1,355-84 ft., 4,000,000 cu. ft. gas daily, P.B. to 1,460 ft.

Jack County: B. C Gilmore 3 Moore, J. W. Williams Sur. A-877, 3 bbl. in 24 hr., top Gunsight lime 404 ft., pay 413-21 ft.

Buttram Pet. 9 Preston, S. Chairs Sur. A-930, dry at 2,032 ft.

Wichita County: Charles Morrison 1 Snoddy, L. Powell Sur. A-242, dry at 2,002 ft.

Rubsam, Switzer & Widner 22 McClure "B," Sec. 5, G.C.&S.F. Sur. A-363, dry at 1,352 ft.

J. W. Hastings 1 Cooper, H. Hastie Sur. A-92, dry at 1,352 ft.

Westbrook Oil 2 Ramming-B, H. Hastie Sur. A-92, dry at 1,290 ft.

W. H. Hamon 6 Johnson, H. Hastie Sur. A-92, 40 bbl. in 24 hr., pumping, 1,290-96 ft., 1,305-23 ft.

Freundlich, Persky & Goldsmith 1 Roller, Sec. 12, McKinney & Williams Sur. A-238, dry at 1,854 ft.

Wilbarger County: G. E. Slaugenhoo 5 Blackman, W. A. McKinney Sur. A-1758, 10 bbl. oil and 25 bbl. water in 24 hr., pumping, 10 qt. shot, 1,475-81 ft.

Young County: W. F. Palmer 4 Campbell "D," Sec. 1484, T.E.&L. Sur., 30 bbl. in 24 hr., pumping, 867-94 ft.

W. F. Palmer 5 Campbell "D," Sec. 1484, T.E.&L. Sur., 35 bbl. in 24 hr., pumping, Gunsight lime 876 ft., 877-99 ft.

Pemeta Oil 5 Robinson "B," Sec. 3203, T.E.&L. Sur., 10 bbl. in 24 hr., pumping, 664-69 ft.

W. F. Palmer 1 Deitrich, Sec. E-10, J. Holeman Sur. A-130, top Gunsight 1,255 ft., dry at 1,300 ft.

Dorian & Mitchell 1 Belknap Coal, Sec. 11, T.E.&L. Sur., 19 bbl. in 24 hr., pumping, 2,000 gal. acid, 20-qt. shot, 3,974-83 ft., T.D. 4,503 ft., P.B. 3,988 ft.

Henry Zweifel 3 Pistola "B," J. T. Cunningham Sur. A-1720, 265 bbl. in 10 hr., ¼-in. choke, est. 400 bbl., 3,955-90 ft.

Henry Zweifel 4 Sewell "C," N. J. Reynolds Sur. A-1631, 569 bbl. in 24 hr., ¼-in. choke, 1,000 gal. acid, perf. casing 4,100-4,215 ft., T.D. 4,255 ft.

Lupton & McLester 2 Medlan "A," D. Moses Sur. A-179, 77 bbl. in 24 hr., 30,800 cu. ft. gas daily, ¼-in. choke, 37-qt. shot, 3,693-3,723 ft.

NORTH TEXAS ACTIVE WILDCATS

Archer County: Dr. K. Van Allen 1 E. C. Kelley, NE NE NE Sec. 68, Harris subd. of Club ranch, 5 000-ft. rotary test, first report.

Phillips 1 Reilley "Pendery," SW NW Sec. 13, Blk. 4, H.&T.C. Sur., 5,600-ft. test, drilling 700 ft.

C. E. Rodgers 1 C. E. Carter, 150 ft. from N and W lines Sec. 34, Blk. 5, Clark & Plumb Sur., 1,150-ft. rotary test, first report.

Sunray Oil Co. 1 Seibold, 560 ft. from E and 330 ft. from S lines L. P. Jones Sur. A-939, Ellenburger test, derrick.

Clay County: Bridwell Oil 1 Myers (old well drilling deeper), Charleton Thompson Sur. A-444, old T.D. 6,065 ft., S.D. at 6,065 ft.

L. P. Burns 1 Hodges, SE SE SW Sec. 64, J. H. Belcher Sur., 6,000-ft. test, S.I., T.D. 3,939 ft.

Continental 1 Spring, 200 ft. from N and 1,254 ft. from W lines Sec. 24, M. True Sur. A-1005, 6,500-ft. rotary test, first report.

Shell 1 Maddox, 2,272 ft. from N and 2,114 ft. from W lines Hughes Sur. A-199, 5,600-ft. test, derrick.

Sinclair Prairie 1 Scheer, 1,124 ft. from E and 330 ft. from S lines Sec. 47, Orange C.S.L. Sur. A-368, drilling 4,620 ft.

Superior Oil 1 Seigler, 467 ft. from S and E lines W 120 acres Sec. 3211, T.E.&L. Sur., 5½-in. casing at 6,250 ft., running squeeze job, T.D. 6,455 ft.

Cooke County: James Anderson 1 Osburn, 491 ft. from N and 330 ft. from E lines B. Sullivan Sur. A-581, 2,500-ft. test, drilling 478 ft.

C. H. Gannon 1 P. McGeorge, 713 ft. from W and

860 ft. from S lines J. Collingsworth Sur. A-211, 2,500-ft. test, first report.

Foard County: Bruce Sullivan 1 McCoy, 1,980 ft. from W and 467 ft. from N lines J. M. Seaton Sur., 6,000-ft. test, setting 12½-in. casing at 252 ft.

Jack County: Alma Oil 1 Maxey, V. W. Maxey Sur., testing and swabbing, T.D. 5,520 ft.

F. Kirk Johnson 1 Shawver, 660 ft. from S and 520 ft. from E lines of NW SE J. Turner Sur. A-609, S.D. 5,520 ft., orders, no Ellenburger.

Magnolia 1 Borden, 1,000 ft. from N and 500 ft. from W lines of W. R. Smith Sur. A-547, Ellenburger test, fishing drill pipe, T.D. 6,022 ft.

Taubert & McKee 1 M. Hoefle, A. James Sur. A-318, correction in company name, top Caddo 4,818 ft., preparing to run drill-stem test, T.D. 4,835 ft.

Montague County: Benson Bros. 1 Riley, 467 ft. from S and midway between E and W lines of farm, C. Ellis Sur. A-1146, 7,500-ft. test, drilling 3,567 ft.

J. A. Chapman 1 Fowler, 330 ft. from S and E lines J. W. Massie Sur. A-463, top Caddo 5,566 ft., reaming down, T.D. 5,611 ft.

Continental 1 Winder, 467 ft. from N and E lines S 40 of W 80 of Sec. 4, Limestone C.S.L. Sur., 7,200-ft. test, drilling 4,622 ft.

Walter H. Gant 1 John Turner, NE NE NE Sec. 59, E.T. Sur., 7-in. casing at 6,218 ft., T.D. 6,238 ft.

Throckmorton County: Helmerich & Payne, 933 ft. from W and 900 ft. from N lines Sec. 2119, T.E.&L. Sur., 4,600-ft. test, top Caddo 4,053 ft., preparing to take drill-stem test, T.D. 4,070 ft.

Humble 1 Parrott, SW SW Sec. 957, T.E.&L. Sur., 4,500-ft. test, rigging up rotary.

Humble 2 A. McKnight, 2,420 ft. from N and 660 ft. from E lines Sec. 2, D.E.&C. Sur. A-1264, 4,500-ft. rotary test, first report.

Young County: F. H. E. Co. and Fleming-Kimbell Corp. 1 Graham, SE cor. Sec. 2912, T.E.&L. Sur., testing, flowed 30 bbl. oil and 30 bbl. water per day, T.D. 4,927 ft.

Panhandle Ref. 1 Allar & Hunt, 467 ft. from N and E lines S½ Sec. 3409, T.E.&L. Sur., 3,750-ft. test, drilled plug, flowed 100 bbl. oil daily, cleaning out.

Panhandle Ref. 1 Harrell, 467 ft. from S and E lines G. N. Smith Sur. A-254, 3,700-ft. rotary test, first report.

Jones and Coleman County Wildcats Showing Oil

FORT WORTH, Tex., Sept. 29.—Testing of shows in two wildcats in this district will soon be under way. In Jones County, a show of oil in the Swastika sand section prompted operator to halt drilling at T. J. Coyne 1 Clyburn, wildcat test north of the Sayles pool.

The wildcat encountered oil saturation in the Swastika at 2,383 ft. and was shut down temporarily waiting on the arrival of 5-in. casing. No. 1 Clyburn is located in the northwest corner of a tract in Lots 24 and 27 in the Holt subdivision of the H. Millard Survey 243. The test is bottomed at 2,397 ft.

The second wildcat to be tested is Merry Brothers & Perini 1 Greer, Lot 2, H. Kegans Survey 520, in Coleman County. No. 1 Greer topped the Gray sand at 3,913 ft. and has set pipe at 3,909 ft.

In the same county, another test, States Oil Corp. 1 Wilson, C. O. Berry Survey 115, drilled the Gray sand from 3,559-3,638 ft. A 60-qt. nitro shot at 3,568-3,629 ft. increased production to 15 bbl. per hour.

Shackelford Pool Extended One Location

The J. H. and R. B. Elliott shallow pool 8 miles south of Albany in Shackelford County has been extended one location west with the completion of Greene & Hagerty 3 Elliott. No. 3 Elliott was completed for 26 bbl. daily, pumping, from the Humble sand at 834-40 ft. and extends the producing zone ½ mile east and west in the pool opened early in the year by C. D. Hagerty & Grossenbacher 1 Elliott, Section 12, L.A.L. Survey. The extension well is located in the center of the southeast 40 acres of Section 11, L.A.L. Survey.

Two Wildcats Staked

Only two wildcat locations were announced for this district during the week. As the week closed rotary rig was being installed for the immediate drilling of Joe Worsham 1 Gladstone McLennan, scheduled 3,500-ft. Palo Pinto lime wildcat test in southeast Haskell County. Nearest production from the Palo Pinto is south and east at Ivy in Shackelford County. No. 1 McLennan is located 440 ft. out of the southwest corner of a 370-acre lease in the S. C. Robertson Survey.

The third deep wildcat for Stonewall County was announced this week, with Shell staking location for 2 W. Z. Rutherford in the NE¼ Section 144, Block 1, H.&T.C. Survey. No. 2 Rutherford is 1,650 ft. west of Shell 1 Rutherford, which was drilled to 6,200 ft. but failed to show for oil in commercial quantities. It is slightly over ¼ mile northwest of the same firm's 1 Annie Smith, discovery well completed last year from the Mississippi lime at 6,015-28 ft.

WEST CENTRAL TEXAS COMPLETIONS

Wildcats

Coleman County: Crabb & McNeel 1 Hanke, N part William Mason Sur. 163, dry at 784 ft.

Jones County, semiwildcat: M. J. Delaney 1 Swanson, 467 ft. from N and E lines NW¼ Sec. 195, B.B.B.&C. Sur., dry at 3,306 ft.

Fields

Akard, Jones County: Hedrick Oil 3 Akard "D," Guadalupe Martinez Sur. 137, 61 bbl. in 12 hr., est. 120 bbl., 15-qt. shot, 2,127-39 ft.
Pet. Prod. 4 Akard, Guadalupe Martinez Sur. 137, 47 bbl. in 24 hr., 2,070-83 ft., new pay for pool.

Bluff Creek, Shackelford County: C. J. Kleiner 3 Morris "C," R. Wilson Sur. 23, 10 bbl. in 24 hr., 10-qt. shot, 1,461-67 ft., P.B. from 1,512 ft.

Cook, Shackelford County: Roeser & Pendleton and Continental 4-A-17 Cook, Sec. 117, E.T. Sur., 129 bbl. in 24 hr., 1,511-20 ft., T.D. 1,692 ft.
Green & Hagerty 3 Elliott, Sec. 11, L.A.L. Sur., 23 bbl. in 24 hr., 834-40 ft.

Loving, Stephens County: Wittmer, Knight & Ewing 1 McKelvin "B," 660 ft. from S and W lines Sec. 11, O.A.L. Sur., 2,724,000 cu. ft. gas daily, 5,000 gal. acid, 3,495-3,528 ft., P.B. from 3,545 ft.

Nail, Shackelford County: Hickok & Reynolds 14 Nail "A," Sec. 133, E.T. Sur., 184 bbl. in 20 hr., 1,000 gal. acid, 1,580-90 ft., P.B. from 1,606 ft.

Sayles, Jones County: Condor Pet. 8 Holt, Sec. 4, Blk. 20, T.&P. Sur., 49 bbl. in 24 hr., 1,916-19 ft.
Johnson, Ungren & Frazier 9 Sayles, Sec. 6, Blk. 70, T.&P. Sur., 88 bbl. in 24 hr., 10-qt. shot, 1,913-30 ft.

Stith, Jones County: Jones & Stasney 1 Cannon, Lot 81, Gedwin subd., De Witt C.S.L. Sur. 176, 204 bbl. in 24 hr., 1,000 gal. acid, 2,296-2,327 ft.

View, Taylor County: Tel-Vez Oil 3 Richards, Lot 10, Guadalupe C.S.L. Sur. 120, dry at 2,407 ft.

WEST CENTRAL TEXAS ACTIVE WILDCATS

Brown County: R. H. Herring 1 Martin, 150 ft. from S and W lines NE¼ NE¼ Sec. 44, H.T.&B. Sur., 1,600-ft. test, spudded and S.D.
Mrs. L. C. Ort 1 McGhee, NE NE SE Sec. 49, H.T.&B. Sur., 2,500-ft. test, drilling 1,825 ft.

Callahan County: J. D. Kynaston 1 Seale, 868 ft. from S and 1,859 ft. from W lines J. H. Brown Sur. 254, 1,000-ft. test, setting 8¼-in. casing, T.D. 600 ft.
George McCamey 1 Windam, 660 ft. from S and 150 ft. from E lines Sec. 21, Victoria C.S.L. Sur., 1,500-ft. test, drilling 1,225 ft.

Coleman County: Merry Bros. & Perini 1 Greer, 1,283 ft. from S and 467 ft. from W lines Lot 2, H. Kegans Sur. 520, 4,000-ft. test, setting casing, T.D. 3,937 ft.
West Coast Prod. Corp. 1 Norris, SW cor. NE 160 ac., J. Greenwood Sur. 304, P.B. to 2,650 ft., waiting on cement.

Concho County: C. M. Joiner Leasing Corp. 1 Armor, 1,315 ft. from S and 330 ft. from W lines Sec. 105, Blk. 72, T.&N.O. Sur., old well drilling deeper, old T.D. 1,565 ft., drilling 3,012 ft.
W. J. Rutledge 1 Will Loveless, 500 ft. from S and W lines Sec. 2, Anderson Sur. A-1673, 5,000-ft. cable-tool test, first report.

Eastland County: Monark Oil & Gas 1 fee, 1,500 ft. from E and 1,800 ft. from N lines Sec. 44, Blk. 4, H.&T.C. Sur., 1,550-ft. test, location.
E. M. Thomason 1 Busbee, 1,320 ft. from N and 330 ft. from E lines Sec. 7, Blk. 2, E.T. Sur., 900-ft. test, drilling 275 ft.

Fisher County: Shell 1 Vaughn, 467 ft. from N and 1,787 ft. from W lines Sec. 205, Blk. 21-V, H.&T.C. Sur., 7,250-ft. test, drilling 4,868 ft.

Jones County: T. J. Coyne 1 Clyburn, NW cor. tract in Lots 24 and 27, Holt subd. of Henry Millard Sur. 243, S.D. 2,397 ft.
Fain-McGaha 1 Hollis, 330 ft. from E and 1,300 ft. from N lines NW¼ Sec. 26, Blk. 15, T.&P. Sur., 2,500-ft. test, setting casing, T.D. 2,305 ft.
S. B. Roberts 1 Cooper, SE SE SW Sec. 20, Blk. 15, T.&P. Sur., set 5½-in. casing at 2,475 ft., S.D., orders, 4,935 ft.
Roeser & Pendleton 1 Moore, 242 ft. from N and 330 ft. from E lines of 40-ac. farm in E part Sec. 33, Blk. 15, T.&P. Sur., 2,300-ft. test, moving in material.
N. L. Snoddy 1 Huddleston, 2,150 ft. from S and 467 ft. from W lines farm in E part of Sec. 41, Blk. 18, T.&P. Sur., 3,000-ft. test, spudded and S.D.

McCulloch County: D. H. Brock 1 Cox, 600 ft. from S and 2,640 ft. from E lines Ludwig Javer Sur. 944, 1,500-ft. test, S.D., orders, 1,020 ft.
C. M. Joiner 1 Lawson, 860 ft. from N and 550 ft. from E lines Valentine Hohman Sur. 1093, 2,000-ft. test, S.D., orders, 1,030 ft.

Palo Pinto County: Hickok & Reynolds 3 Gauldin, 467 ft. from S and E lines Sec. 1756, T.E.&L. Sur., 4,250-ft. test, drilling 2,700 ft.

Shackelford County: L. L. Rector 1 Grimes, 150 ft. from S and W lines NW¼ Sec. 75, Blk. 12, T.&P. Sur., drilling 675 ft.
R. H. Roark 1 Elliott "B," SE SW Sec. 9, L.A.L. Sur., 5,000-ft. test, drilling 2,480 ft.

Somervell County: Plymouth Oil 1 Cousins, 456 ft. from SE and NE lines of tract in John Echols Sur., 7,500-ft. test, drilling 5,108 ft.

Stephens County: T. S. Schroeder 1 Corbett, 2,200 ft. from E and 444 ft. N lines Sec. 12, Blk. 3, S.P. Sur., drilling 3,970 ft.
T. G. Shaw 1 Stroud "B," 330 ft. from N and 660 ft. from E lines SW¼ Green Newton Sur. A-128, hole full oil, preparing nitro shot, T.D. 4,500 ft.

Stonewall County: Shell 1-A Petterson, 1,650 ft. from N and 990 ft. from W lines Sec. 357, Blk. D, H.&T.C. Sur., Ellenburger test, drilling 6,435 ft.

Taylor County: Butler & Horne 1 Merchant, 330 ft. from N and 2,687 ft. from W lines S½ Sec. 30, Blk. 16, T.&P. Sur., 2,800-ft. cable-tool test, first report.
Deep Oil Dev. 1 Higgins, 330 ft. from N and E lines Lot 8, Sec. 3, Corley Sur., 2,850-ft. test, attempting to drill by, 2,298 ft.
Ce-Beth 1 City of Abilene, S shore of Lake Abilene on city property, S.D. 4,368 ft.
Hedrick Oil 1 Arrant, 2,970 ft. from N and 330 ft. from W lines Sec. 53, Blk. 16, T.&P. Sur., 2,500-ft. test, drilling 1,543 ft.
Ungren & Frazier 1 Trinity University, 330 ft. from S and W lines of E 32.7-ac. tract, Lot 2, Grimes C.S.L. Sur. 148, 2,900-ft. test, drilling 1,117 ft.

G. A. WELDING Shop Notes

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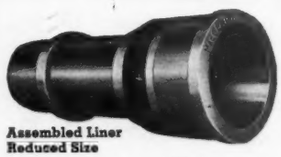

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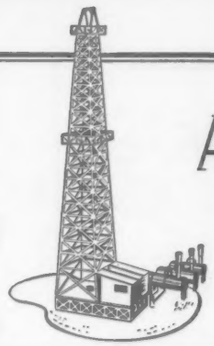

Among the Drilling

HELMERICH & PAYNE, Tulsa contracting firm, found the Woodbine sand dry at a wildcat test in Wood County, Texas, drilled as the Fred Strang 1 S. L. Old. The wildcat test was carried 5,301 ft. Location was 467 ft. from the S and 644 ft. from the W lines of a 317-acre tract in the J. R. Smith Survey.

ARROW Drilling Co., Houston, Tex., is drilling ahead in the Port Barre field, St. Landry Parish, Louisiana, for the Pan American Production Co. while contracts for 12 and 13 Garland have been received, and these will be drilled as soon as the present well is completed. Another operation is reported in the same field for the Texas Co., while in the Charenton field, St. Mary Parish, one rotary is running for the Fifteen Oil Co.

C. T. McLAUGHLIN, of Midland, Tex., is drilling below 4,868 ft. at Shell 1 Vaughn on a 12,000-acre block in Fisher County, 18 miles northwest of Sweetwater, Tex. Contracted to 7,250 ft., 1 Vaughn is 467 ft. from the N and 1,787 ft. from the W lines of Section 205, Block 21-V, H.&T.C. Survey.

CRON & GRACEY, Houston, Tex., were testing Moore & Ahern 1 Burdett which is expected to open a new field 2 miles east of the Texana field, Jackson County, Texas. Completion is being made in the 5,200-ft. Marginulina sand, and the rig is expected to be moved 934 ft. north where location was made for another well.

O'DONOHOE & GIBSON, drilling contractors, have shut down at Tom B. Medders 1 J. W. Daws, scheduled 5,500-ft. wildcat in southwestern Young County, Texas, after drilling dry Ellenburger lime from 4,818 to 4,920 ft., total depth. The Caddo lime was logged at 3,866 ft., and the Mississippi at 4,646 ft. No. 1 Daws is on a 9,000-acre block in the center of the NW Section 750, T.E.&L. Survey.

GEORGE ECHOLS, Houston, Tex., is nearing an interesting depth on the old Napoleonville dome, Assumption Parish, Louisiana, where 1 Armelise Planting Co. is being drilled for himself. Two other rigs are running in the St. Gabriel field, Iberville Parish.

BERT FIELDS, of Dallas, Tex., has been contracted to drill a 3,500-ft. test of the Palo Pinto lime in southeastern Haskell County, Texas. The wildcat will be drilled for Joe Worsham, also of Dallas, as 1 Gladstone McLennan, staked 440 ft. out of the southwest corner of a 370-acre lease in the Robertson Survey. Nearest Palo Pinto production is south and east at Ivy in Shackelford County.

JACK FRAZIER, Houston, Tex., has started drilling operations on his 1 Mason, Andrews and Briscoe, a wildcat located in the John Foster Survey, Fort Bend County, Texas. Two other rotaries are located in the Dyersdale field, Harris County.

RICHMOND Drilling Co. and Ray Albaugh 1 J. J. Handley, Dawson County, Texas, wildcat, has topped the Yates sand at 3,050 ft. and the frosted quartz grains at 3,060 ft. With elevation of 3,086 ft., the test has topped these markers approximately 25 to 30 ft. higher than did the Albaugh 1 Robinson, small producer 1¼ mile southwest. No. 1 Handley has drilled to 3,570 ft. Location is in the SE SW Section 36, Block M, E.L.&R.R. Survey.

W. L. GOLDSTON, Houston, Tex., has opened a new gas-distillate field south of the town of Needville in Fort Bend County, Texas, with the completion of 1 E. M. Coyle. Total depth of the hole is 6,463 ft., and the well is testing through perforated casing opposite the Frio sand at 5,100 ft.

ROSS Drilling Co. will seek to establish a north extension to the Benton-Holmes pool of northeastern Montague County, Texas. The 3,800-ft. test will be drilled in the southeast corner of a 140-acre tract owned by the First National Bank in the western part of the J. L. Graham Survey. Production in the Benton-Holmes pool is found in four separate horizons.

BELL & LOFFLAND, Inc., California drilling contractors, have been awarded a contract by General Petroleum Corp., to drill a deep test to be known as S. P. 51-15 at Shafter, Calif.

S. J. TAYLOR, drilling contractor of Tyler, Tex., was running casing at the Oswego Oil Co. 1 W. A. Bonney in Grimes County, Texas, after favorable results were obtained from cores and an electrical survey. The wildcat topped the Wilcox at 2,670 ft. with cuttings showing oil stain in drilling the first 5 ft. A 2-ft. core to total depth of 2,677 ft. returned sand with favorable oil show. The W. A. Bonney is 2 miles south of Iola in the Timothy Jones Survey.

RICHMOND Drilling Co., Midland, Tex., has been awarded contract for drilling the Ed W. Wahlenmaier 1 Peebles, 2 miles southwest of Garden City in Glasscock County, Texas. Location is in Section 15, Block 34, Township 4s, T.&P. Survey. Contract is to 3,500 ft.

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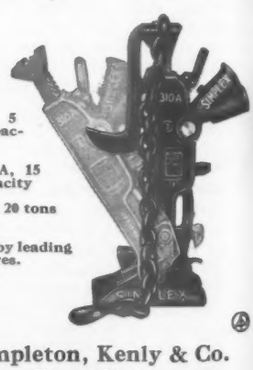

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Contractors

AMERICAN Drilling Co., Hobbs, N. M., has staked location for a 5,500-ft. wildcat in Terry County, northern West Texas. The test will be the company's 1 W. T. Hundall, with location 467 ft. from the SW cor. of Section 14, Block D-14, C.&M. Survey. Site is 4½ miles southwest of George P. Livermore, Inc., 4 M. E. Jacobson, largest producer in the Terry County portion of the Slaughter field, and 4½ miles northeast of Texas Co. 1 S. T. Murphy which showed for a possible pool opener.

ED PARSONS, Longview, Tex., has completed water and gas lines for A. L. Andree 1 Henry, Ewing Survey, Woodbine sand test south of Golden, Tex., and will start drilling this week.

DELANEY-OSBORN Drilling Co., Ada, Okla., has assigned rotary rig to the Earlsboro area of Seminole County, Oklahoma, for a joint operation with E. R. Rabon, Tulsa independent. Wilcox sand, expected around 4,300 ft., is the projected goal but operators plan to core upper sands as well. The operation is on school land, NE SE NW 16-9-5e.

GLENN H. McCARTHY, Houston, Tex., is moving in a string of 5½-in. casing, preparatory to testing 1 Sayle, a prospective Wilcox sand producer located in the Magnolia area, Montgomery County, Texas. Total depth of the hole is 9,754 ft., and the casing is expected to be cemented near the bottom to test several oil and gas shows in the Wilcox which was topped at about 8,200 ft.

McDONALD & CAMPBELL, Dallas, Tex., have the contract for J. C. Moore 1 G. A. Green, a wildcat 6 miles north of Crow, Tex., in the Candler Survey, and were reported ready to start drilling this week.

GUY M. MABEE, Evansville, Ind., has received contract to drill H. K. Riddle et al 1 Mary Toops, C S½ NW SW 17-3s-14w, Edwards County, Illinois, ¼ mile west of the Grayville city limits.

TWIN Drilling Co., Mount Pleasant, Mich., has contracted to drill L. & S. Drilling Co. 1 Mrs. J. Brown, a new test, SE NE NE 24-14n-6w, Isabella County, Michigan.

L. T. BARBER, Mount Pleasant, Mich., has assigned a string of tools to Isabella County, Michigan, where he has contracted to drill Belvidere Oil Co. 1 Morey, SW NW NW 13-6n-10w.

UNION Rotary Co., Mount Pleasant, Mich., has been awarded contract for Taggart Brothers Co. 1 Richardson, SW SW SW 15-18n-9w, Osceola County, Michigan.

TARGET Drilling Co., Wichita Falls, Tex., will drill an extension test to a gas property 9 miles northwest of Breckenridge, Stephens County, Texas. The Target company is associated with E. P. Griffin in the extension test, 1 W. H. Green, in the SW cor. Section 1284, T.E.&L. Survey.

TRINITY Drilling Co., Dallas, Tex., is dismantling rig used in drilling a deep wildcat test in western Lynn County, Texas. Drilling was halted at 5,202 ft. in the 1 Dan Auld, 2 ft. below contract depth.

BUTLER & HORNE Drilling Co., Abilene, Tex., is moving a rig and tools from the Wimberly field to a new Taylor County, Texas, wildcat location, 4 miles west of Abilene, on the Mack Merchant ranch, Section 30, Block 10, T.&P. Survey.

BURTNER, Morgan & Stephens, Wooster, Ohio, have received contract to drill three gas tests in Hinckley Township, Medina County, Ohio, for H. C. Bishop of New York who is exploring eight farmout tracts obtained from East Ohio Gas Co.

OLSON Drilling Co., Tulsa, has received contract to drill Gulf Refining Co. 1 Peter J. Bolger, C S½ SE NE 24-18n-11w, Lake County, Michigan.

WILLIAM J. MORRISS, Saginaw, Mich., has moved a string of tools to St. Clair County, Michigan, where he will drill 1 S. Lumburrner estate, SW SW SE 18-7n-17e.

ERVIN MAJOR, Standish, Mich., has moved cable tools to location for 1 Bryan, NE SE SW 22-19n-3e, Arenac County, Michigan.

RED IRON Drilling Co., Gladewater, Tex., has the contract to drill a wildcat in the north 60 acres of an 80-acre tract, J. P. Moseley Survey, Wood County, Texas, for Loyce Phillips, independent operator of Gladewater, Tex. The test, known as Phillips 1 Mary Snider et al, is 2,200 ft. southwest of an old failure, Johnson 1 Green, same survey.

WOOSTER Drilling Co., Wooster, Ohio, has received contract to drill four gas tests for Harold C. Bishop of New York in Medina and Lorain counties, Ohio.

E. OBERMILLER, North Canton, Ohio, has moved a cable-tool rig to Green Township, Summitt County, Ohio, to drill a gas test for H. C. Bishop of New York. Contract calls for drilling to 4,500 ft. Location is immediately north of production in the old Canton gas field.

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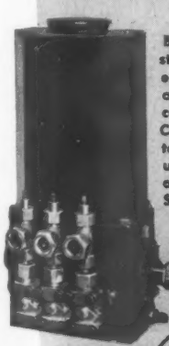

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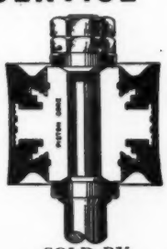

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New Producing Area Opened In Bridgeport Sand

By STAFF CORRESPONDENT

EVANSVILLE, Ind., Sept. 29.—Gibson County, scene of a recently opened McClosky pool, now has another shallow sand pool. The new pool opener, Bert Fields 1 G. Hall, SW NW SW 31-2s-12w, is now on pump making about 22 bbl. of fluid in 8 hours, 12 per cent of which is water. The well, producing from the Bridgeport sand at 1,095-1,105 ft., opens a new area midway between the Griffin field and Owensville.

The new McClosky pool opener, R. N. Sylvester 1 Potts, W½ SW SW 24-1n-10w, has been put on pump and is now making 10 bbl. an hour or about 250 bbl. a day. It is still producing from 2 ft. of pay from 1,701-03 ft., which has not been acidized. About a mile southwest of this new discovery, Walter Miller is drilling near 800 ft. with rotary tools for 1 Keer, NE SW NW 26-1n-10w.

In the Caborn field of Posey County, Central States 1 Seifert, NW SW NW 30-6s-12w, is reported pumping about 40 bbl. of oil, natural, from the Palestine sand This test is making some water but this is reportedly decreasing.

INDIANA COMPLETIONS

Wildcats

Daviess County: D. L. Norris et al 1 Dorsan, W½ SE SE 35-2n-5w, dry at 528 ft.
Newton County: Palmer Corp. 1 Henkle, SE SE SE 36-30n-9w, dry, Trenton 944 ft., old well deepened from 485-1,001 ft.
Orange County: U. S. Oil 1 G. E. Willyard, SW NW NE SW 35-1n-1w, dry, old well deepened from 574-1,516 ft.
Vigo County: Krauss-Ricketts et al 1 Hollenbeck, SW NE 14-10n-8w, dry at 1,895 ft.

Fields

Griffin, Gibson County: Mabee & Longhorn 2 Helm, W½ W½ SW SW 22-3s-14w, dry at 2,931 ft.
Ed Holmans 1-A Mumford, SE SE SW 29-3s-13w, rig abandoned.
Sullivan, Sullivan County: O. A. Thayer 1 Wickey, NE NW 7-7n-9w, 1,500,000 cu. ft. gas, sand 605-11 ft., T.D 1,400 ft., P.B. 600 ft.

OHIO

NEWARK, Ohio, Sept. 29.—Operating in the Ohio fields continued at a normal pace during the past week. The Newark field in Licking County was the most active with five gas wells and three dry holes reported. Perry County yields small oil producers. Knox, Muskingum and Wayne counties had fair gas completions in the Clinton sand.

OHIO COMPLETIONS

Ashland County

Green Township: Ohio Fuel Gas Co. 1 Lillian McClure, Sec. 6, 115,000 cu. ft. gas, Clinton, T.D. 2,800 ft.
Mohican Township: Hoag et al 1 Donald Ely, Sec. 26, 25 bbl., Berea, T.D. 2,976 ft., no Clinton sand, filled back to 670 ft. and shot oil show in Berea.

Athens County

Canaan Township: Ohio Fuel 1 Jesse Thompson, Sec. 11, show oil and gas, second Berea, plugged, T.D. 1,617 ft.
Carthage Township: H. B. Walker & Co. 1 M. R. Castle, Sec. 31, dry, Maxton sand, T.D. 1,185 ft.

Guernsey County

Adams Township: C. C. Wharton 1 William Knight, Sec. 21, 60,000 cu. ft. gas, Berea, shot, T.D. 1,136 ft.
Knox Township: Worral & Keith 1 W. S. Kennedy, Sec. 25, dry, Berea, T.D. 1,272 ft.

Knox County

Brown Township: Allen Willey 1 Charles Nyhart, first quarter, 1,770,000 cu. ft. gas, Clinton, T.D. 2,933 ft.
Butler Township: Ohio Fuel 1 Isaac Wilson, first quarter, 12,000 cu. ft. gas, Clinton, plugged, T.D. 3,020 ft.

Licking County

Madison Township: Ohio Fuel 1 M. E. Albright, Lot 9, second quarter, 1,000,000 cu. ft. gas, Clinton, shot, T.D. 2,543 ft.
Dowler Oil 1 Charles Gill, second quarter, 2,000,000 cu. ft. gas, Clinton, shot, T.D. 2,544 ft.
Ohio Fuel 2 C. J. Merrill, Lot 2, second quarter, dry, Clinton, T.D. 2,633 ft.
Ohio Fuel 2 William Oatman, Lot 8, second quarter, dry, Clinton, T.D. 2,640 ft.
Mary Ann Township: Ohio Fuel 1 W. H. Miles, Sec. 16, 80,000 cu. ft. gas, Clinton, T.D. 2,668 ft.
Ohio Fuel 2 John Maharg, Sec. 6, 1,150,000 cu. ft. gas, Clinton, T.D. 2,734 ft.
Allen Willey 1 Frank Wince, SW, 220,000 cu. ft. gas, Clinton, T.D. 2,610 ft.
Washington Township: Wittmer Co. 1 M. Warner, S, dry, Clinton, T.D. 2,450 ft.

SUMMARY OF COMPLETIONS

Indiana

	No.	Bbl.	Footage
Gas wells	1	*1.5	1,400
Dry holes	3		5,354
Total	4		6,754

Ohio

	No.	Bbl.	Footage
Oil wells	4	95	10,376
Gas wells	16	*11.4	43,352
Dry holes	13		24,356
Total	33		77,084

Eastern Kentucky

	No.	Bbl.	Footage
Gas wells	3	*1.4	5,727
Dry holes	2		5,117
Total	5		10,844

Western Kentucky

	No.	Bbl.	Footage
Oil wells	6	100	4,099
Dry holes	5		4,895
Total	11		8,894
Recompletions	1	100	

*Million cu. ft.

Lorain County

Columbia Township: Ohio Fuel 1 John Hawke, Lot 96, 600,000 cu. ft. gas, Clinton, shot, T.D. 2,716 ft.

Medina County

Hinckley Township: William Dempsey 2 John Hutchinson, Lot 90, 320,000 cu. ft. gas, Oriskany, T.D. 2,198 ft.

Meigs County

Rutland Township: Fleming et al 3 Ed Heath, Sec. 22, dry, Freeport sand, T.D. 604 ft.

Monroe County

Washington Township: H. B. Walker & Co. 14 W. S. English, SW Sec. 5, small showing oil only, Injun sand, will be used for pressure intake well, T.D. 1,564 ft.
Franklin Township: Wools Rocks Oil Co. 2 James McBride, Sec. 23, 60,000 cu. ft. gas, first Cow Run, T.D. 700 ft.

Morgan County

Marion Township: Williams Bros. 5 W. V. Geddes, Sec. 5, show gas, plugged, Brill (water), T.D. 1,000 ft.
Ross et al 1 Isaac Mayle, Sec. 2, dry, Salt sand, T.D. 950 ft.

Muskingum County

Harrison Township: Pure Oil Co. 2 Mrs. G. P. Dickson, Sec. 14, 1,600,000 cu. ft. gas, Clinton, T.D. 4,268 ft.
Mehowa O. & G. Co. 2 H. C. Floyd, Sec. 11, 500,000 cu. ft. gas, Clinton, shot, T.D. 4,181 ft.

Perry County

Coal Township: Chartiers Oil Co. 219 Hocking Valley Products Co., Sec. 28, 40 bbl., Clinton, shot, T.D. 3,422 ft.
Thorn Township: B. Davis et al 1 William Starkey, 25 bbl., Clinton, shot, T.D. 2,709 ft.
Ohio Fuel 1 C. L. Love, Sec. 34, 2 bbl., 40,000 cu. ft. gas, Clinton, shot, plugged, T.D. 2,747 ft.
Preston Oil Co. 1 Robert Love, Sec. 34, dry, Clinton sand, T.D. 2,697 ft.

Tuscarawas County

Sandy Township: Status Dev. Co. 1 E. G. Farber, Sec. 10, 280,000 cu. ft. gas, Clinton, shot, T.D. 4,932 ft.

Washington County

Barlow Township: S. C. Daily 8 H. B. Woodburn, Sec. 10, 150,000 cu. ft. gas, stray, T.D. 1,324 ft.
Independence Township: John Herlan 1 Ed Matheny, Sec. 32, 5 bbl., 190,000 cu. ft. gas, Peaker and Salt sands, shot, T.D. 1,269 ft.
Liberty Township: Burkhart et al 5 J. H. Hall, Sec. 4, 25,000 cu. ft. gas, Injun, T.D. 1,825 ft. (old well drilled deeper).

Wayne County

Plain Township: Ohio Fuel 2 Milton Shaffer, Sec. 32, 1,260,000 cu. ft. gas, Clinton, shot, T.D. 3,047 ft.

EASTERN KENTUCKY

ASHLAND, Ky., Sept. 29.—Three gas wells were completed in eastern Kentucky this week with a combined daily gas flow of 1,370,000 cu. ft. Two other operations were completed and reported as dry holes, and at the same time several new locations were made.

Drilling operations continue to point upward in this area with the national-defense program demand seemingly the main factor in many instances.

Knott County

Inland Gas Corp. 225 Dan Martin, Big Branch, T.D. 1,894 ft., 525,000 cu. ft. gas, Maxon, R.P. 610 lb.
Kentucky-West Virginia Gas Co. 5329 Richard Hall, Dick Hall Branch, 353,000 cu. ft. gas at 2,830 ft., lime, R.P. 375 lb.

Pike County

Kentucky-West Virginia Gas Co. 626 J. C. Mullins, Bushy Run, dry at 3,082 ft.

Floyd County

Kentucky-West Virginia Gas Co. 5342 John Crider, Buffalo Creek, 492,000 cu. ft. gas, Salt sand, at 1,003 ft.

Columbian Fuel drilled through the Big Six into slate reaching a total depth of 2,435 ft. in the Dan Davis well on Jennys Creek in Johnson County. There was a slight show of gas. Company officials are undecided on shooting, acidizing, or plugging.

Reports reaching here from usually reliable sources cite a well drilling in near Barboursville in Knox County with a production of 14 bbl. of oil per day. However, exact location of the well and completion data are not available here.

WESTERN KENTUCKY

Daviess County

Birk City district: J. C. Barnett 3 Rebecca Boswell, 30 bbl., shot, Jett sand 1,252-66 ft., T.D. 1,268 ft.
Pleasant Ridge district: Daugherty 4 G. H. Stone, 10 bbl., 30-qt. shot, stray sand 687-720 ft., T.D. 720½ ft.
Snyder 7 Alfred Sutton, dry, T.D. 1,162 ft.

Hancock County

Floral district: Batton 4 H. Remington, abandoned location.

Henderson County

Niagara district: Schneider & Gwin 3 Bettie Moss, 15 bbl., 50-qt. shot, stray sand 655-98 ft.

McLean County

North Livermore district: Miller 2 George Hudson, dry, T.D. 1,700 ft.
Grindstone Hill district: Ohio Oil Co. 8 G. B. McManama (Account No. 2), 100 bbl., deepened from old T.D. 1,080 ft., to McClosky.
Cameron 4 J. F. Kerrick, rigging up to deepen to McClosky from old T.D. 1,433 ft.

Ohio County

Pellville district: Randall 8 O. T. Burdett, 25 bbl., 50-qt. shot, Jett sand 503-17 ft., T.D. 660 ft.
Fordsville district: Sands Petroleum 2 Grace Miles, 10 bbl., 40-qt. shot, Jett sand 240-67 ft., T.D. 275 ft.
United Petroleum 6 I. N. Lanham, 10 bbl., 40-qt. shot, Jett sand 420-40 ft., T.D. 477 ft.
Pleasant Ridge district: Miller 3 Dailey heirs, dry, T.D. 829 ft.

Union County

Morganfield district: Toombs & Smith 1 W. B. Harris, dry, T.D. 1,104 ft.

Illinois Fields

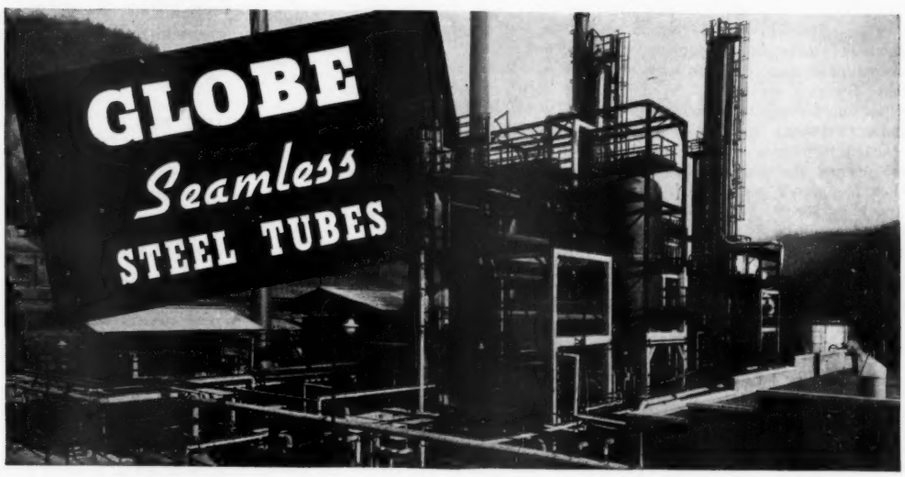
(Continued from Page 59)

NW NW SE NW 27-6n-5e, pumped 72 bbl. oil and 4 bbl. water, natural, Paint Creek 2,285-98 ft., Benoist 2,313 ft., T.D. 2,332 ft., P.B. 2,329 ft.
Mount Carmel, Wabash County Dean & Morton 2 Sprinkle, NE NE SW 21-1s-12w, pumped 100 bbl. oil and 25 bbl. water, 40-qt. shot 1,465-85 ft., Biehl 1,463-85 ft., T.D. 1,485 ft.
New Harmony, White County: Tide Water 7 Evans, Sr. SE NE 5-4s-14w, pumped 98 bbl., 60-qt. shot 2,797-2,821 ft., Aux Vases sand 2,796-2,816 ft., T.D. 2,824 ft.
Superior 26 E. M. Fitten, NE NW NW 23-4s-14w, pumped 146 bbl., 86 per cent salt water, 20-qt. shot 2,658-65 ft., 80-qt. shot 2,852-70 ft., Aux Vases 2,855 ft., Cypress sand 2,594-2,628 ft., 2,653-70 ft., T.D. 2,870 ft.
Superior 16 Fitten-A, NW SW SW 28-4s-14w, pumped 146 bbl., 26 per cent salt water, 50-qt. shot 2,705-30 ft., 100-qt. shot 2,704-30 ft., Benoist 2,693 ft., T.D. 2,730 ft.
Superior 21 E. M. Fitten-A, SW SW SW 28-4s-14w, pumped 100 bbl., 90-qt. shot 2,838-60 ft., 40-qt. shot 2,709-20 ft., perf. 2,683-89 ft., 2,572-90 ft., Aux Vases 2,838-48 ft., Benoist 2,695-2,769 ft., T.D. 2,860 ft.
Sun 35 Greathouse, NE NE SW 33-4s-14w, pumped 132 bbl., 80-qt. shot 2,568-96 ft., Cypress sand 2,577-96 ft., T.D. 2,596 ft.
Superior 20 E. M. Fitten-A, NW NW NW 33-4s-14w, pumped 150 bbl., 120-qt. shot 2,834-52 ft., perf. 2,834-52 ft., 2,700-28 ft., 2,571-98 ft., Cypress sand 2,571-26 ft., Benoist 2,696-2,766 ft., Aux Vases 2,834-52 ft., T.D. 2,860 ft.
Superior 14 H. E. Given, W½ NE SE 33-4s-14w, pumped 160 bbl., 100-qt. shot 2,708-29 ft., perf. 2,669-78 ft., 2,684-92 ft., 2,142-47 ft., Waltersburg 2,142-72 ft., Benoist 2,696-2,729 ft., T.D. 2,729 ft.
Mabee 5 Smith, SE SE SW 4-4s-14w, flowed 123 bbl., 40-qt. shot 2,697-2,710 ft., Benoist 2,688 ft., T.D. 2,706 ft.
McBride 2 Crawford, SW SE NE 32-3s-14w, pumped 210 bbl., 80-qt. shot 2,750-65 ft., Benoist 2,744 ft., T.D. 2,957 ft., P.B. 2,807 ft.
New Haven, White County: Sinclair 2 Botticher, SE NE SW 19-7s-11e, pumped 58 bbl. oil and 20 bbl. water, perf. 2,450-57 ft., Aux Vases sand 2,724 ft., old well deepened from 2,749-2,895 ft., P.B. 2,840 ft.
Hiawatha 5 Stinson, SW SE NW 19-7s-11e, pumped 60 bbl., perf. 2,130-40 ft., 40-qt. shot 2,443-54 ft., Cypress sand 2,440 ft., T.D. 2,454 ft.

Noble, Richland County: Godlin & Hoffman 1 Shannon, E½ E½ SE NE 17-3n-9e, pumped 14 bbl., Mc Closky 3,094 ft., T.D. 3,362 ft., P.B. 3,354 ft.
North Boos, Jasper County: Hays 1 C. Ross, SE SE SW 5-6n-10e, flowed 886 bbl. in 21 hr., 5,000 gal. acid, McClosky 2,770-72 ft., 2,782-92 ft., T.D. 2,800 ft.
Pure 2 E. O. Ross, NW SE SE 5-6n-10e, flowed 28.. bbl., 5,000 gal. acid, McClosky 2,745-50 ft., T.D. 2,790 ft.
Texas 4 Gregoise-A, NE SW SE 5-6n-10e, swabbed 146 bbl., 5,000 gal. acid, McClosky 2,777-83 ft., T.D. 2,785 ft.
Joe Carroll 1 Ross, NW SW NE 8-6n-10e, flowed 426 bbl., 5,000 gal. acid, Ste. Genevieve 2,762 ft., pay 2,798-2,810 ft., 2,827-30 ft., 2,833-37 ft., T.D. 2,8.. ft.
Parkersburg, Richland County: Sinclair 3 C. Clodfelter, N½ NW SW 29-2n-14w, flowed 1,244 bbl., 2,000 gal. acid, Ste. Genevieve 3,068 ft., T.D. 3,137 ft.
Ohio 2 Koertge, N½ SE NW 29-2n-14w, flowed 1,192 bbl., 5,000 gal. acid, McClosky 3,119-28 ft., T.D. 3,128 ft.
W. Cuncan 1 Moran, N½ NE SE 29-2n-14w, location abandoned.
Rising Sun, White County: First Nat. Pet. Trust 1 H. Karch, SE NE SW 13-6s-10e, pumped 270 bbl., natural, Palestine 2,010-15 ft., T.D. 2,021 ft.
C. E. Brehm et al 2 Sisson-Higgins, SW SE SW 24-6s-10e, location abandoned.
Roland, White County: Sinclair 5 McKenzie, SE NE SE 11-7s-8e, flowed 124 bbl., 30-qt. shot 2,893-2,903 ft., 10-qt. 2,735-39 ft., perf. 2,174-94 ft., Benoist 2,809 ft., Aux Vases 2,882 ft., T.D. 2,905 ft.
Rural Hill, Hamilton County: Texas 2 T. Lockwood, SW SW NE 13-6s-5e, pumped 24 bbl., 20-qt. shot 2,152-72 ft., 40-qt. shot 3,152-72 ft., Aux Vases 3,132 ft., T.D. 3,175 ft.
Texas 1 Knight, NW NW NE 13-6s-5e, flowed 565 bbl. from Aux Vases and McClosky, perf. 3,170-74 ft., 1,000 gal. acid, reacidized 3,000 gal., reacidized 5,000 gal., Aux Vases 3,084-3,104 ft., Fredonia 3,205 ft., pay 3,260-66 ft., 3,292-97 ft., 3,301-7 ft., T.D. 3,349 ft.
Magnolia 1 C. R. Sloan, SE NE NW 13-6s-5e, pumped and flowed 316 bbl., perf. 3,177-86 ft., 2,000 gal. acid, reacidized 2,000 gal., perf. 3,263-72 ft., reacidized 2,000 gal., T.D. 3,362 ft., P.B. 3,310 ft.
Sailor Springs, Clay County: C. Robinson 1 Tolliver Eastin, SW NE 26-4n-7e, dry at 3,034 ft., base Pennsylvanian 2,010 ft., Menard 2,198 ft., Tar Springs 2,310 ft., Glen Dean 2,424 ft., Barlow 2,598 ft., Benoist 2,802 ft., Aux Vases 2,876 ft., Ste. Genevieve 2,934 ft., Rosiclare 2,960 ft., Fredonia 2,994 ft.
Storms, White County: Angle et al 1 Aud, S½ SE SW SW 23-6s-9e, dry at 2,323 ft., Vienna 2,279 ft., Tar Springs 2,309 ft.
Walpole, Hamilton County: Texas 2 O. Irvin, S½ NE SW SE 27-6s-6e, pumped 134 bbl., 30-qt. shot 3,079-3,100 ft., Aux Vases 3,056 ft., T.D. 3,100 ft.
West Irons, White County: J. E. Thompson 1 Gray, SW SW NE 26-6s-8e, flowed 160 bbl., 5,000 gal. acid, McClosky 2,999-3,006 ft., 3,012-17 ft., T.D. 3,065 ft.
Woodlawn, Jefferson County: Magnolia 9 I. Shirley, NE SE NE 35-2s-1e, pumped 235 bbl., 8-qt. shot 1,990-94 ft., Benoist 1,980 ft., T.D. 1,994 ft.
Magnolia 10 I. Shirley, SE SE NE 35-2s-1e, pumped 557 bbl., 20-qt. shot 1,985-93 ft., Benoist 1,972 ft., T.D. 1,993 ft.
Obering 1 Burkhardt, SW NE NE 35-2s-1e, pumped 105 bbl., 10-qt. shot 1,996-2,002 ft., 15-qt. shot 1,996-2,002 ft., Benoist 1,990 ft., T.D. 2,002 ft.
Shell 4 Burkhardt, NE SW NE 35-2s-1e, pumped 125 bbl., 10-qt. shot 1,973-80 ft., Benoist sand 1,973-80 ft., T.D. 1,980 ft.
McBride 2 McMillen, NE NW SW 36-2s-1e, pumped 485 bbl. in 21 hr., 35-qt. shot 1,958-83 ft., Benoist 1,948 ft., T.D. 1,996 ft.
McBride 1 C. A. Piper, NW SW SW 36-2s-1e, pumped 415 bbl., 70-qt. shot 1,957-85 ft., Benoist 1,986 ft., T.D. 1,988 ft.
Nation 3 C. A. Piper, SW SW SW 36-2s-1e, pumped 528 bbl., 45-qt. shot 1,943-48 ft., Benoist 1,926 ft., T.D. 1,958 ft.
Nation 4 C. A. Piper, SE SW SW 36-2s-1e, pumped 500 bbl., 40-qt. shot 1,961-86 ft., Benoist 1,956 ft., T.D. 1,986 ft.
Texas 1 A. Trautt, SW SW NW 36-2s-1e, pumped 328 bbl., 7-qt. shot 1,954-61 ft., Benoist 1,944-56 ft., T.D. 1,961 ft.
Texas 2 Trautt, NW SW NW 36-2s-1e, pumped 240 bbl., natural, Benoist 1,956 ft., T.D. 1,963 ft.
Magnolia 3 F. Oslager, NW SE NW 1-3s-1e, pumped 588 bbl., 28-qt. shot 1,968-78 ft., Benoist 1,955 ft., T.D. 1,978 ft.
Nation 1 C. A. Piper, NE NW NW 1-3s-1e, pumped 625 bbl., 60-qt. shot 1,929-57 ft., 150-qt. 1,929-59 ft., Benoist 1,921 ft., T.D. 1,961 ft.
Nation 2 C. A. Piper, SW NW NW 1-3s-1e, pumped 595 bbl., 60-qt. shot 1,920-48 ft., Benoist 1,912 ft., T.D. 1,950 ft.
Texas 1 J. Swidt, NW SW NW 1-3s-1e, pumped 368 bbl., 20-qt. shot 1,913-33 ft., Benoist 1,899 ft., T.D. 1,933 ft.
McBride 3 Eubanks, SW NW NE 2-3s-1e, pumped 495 bbl., 40-qt. shot 1,934-59 ft., Benoist 1,930 ft., T.D. 1,959 ft.
Texas 2 Walker, SE NE NW 2-3s-1e, pumped 240 bbl., 5-qt. shot 1,960-64 ft., 10-qt. shot 1,960-64 ft., Benoist 1,951 ft., T.D. 1,964 ft.
Texas 4 Walker, NW SW NE 2-3s-1e, pumped 350 bbl., 5-qt. shot 1,949-53 ft., Benoist 1,940 ft., T.D. 1,953 ft.

ILLINOIS DRILLING REPORT

Adams County: O. A. Reed 1 Phillips, N½ SE NE SE 19-2s-6w, drilling 715 ft.
Bond County: K. Woolsey 1 File, SW SE SW 22-5n-4w drilling 430 ft.
Champaign County: Barber & Sievers 1 Lindsey, NW SE 20-20n-8e, drilling 1,297 ft.
C. Robinson 1 Springer, NW NW SW 18-22n-8e, 8-in 298 ft., 6-in. 796 ft., drilling 885 ft.
Clay County: Scott 1 Rogers, NE NW NW 36-4n-7e, pumped 20 bbl. oil and 25 bbl. water on beam, putting on pump.
Williams 1 Schnautz, NW NE SW 35-4n-7e, T.D 2,613 ft., 40-qt. shot 2,599-2,611 ft., fishing.
B. F. Williams 2 Keck, SE NE SW 35-4n-7e, drilling 2,031 ft.
C. Robinson 1 Coggan, SW SW SW 17-4n-8e, squeezed all perf., drilled to 3,003 ft., perf. 2,996-3,000 ft., swabbing.
Clinton County: Texas 1 P. Gray, S½ NW SE 35-3n-2w, T.D. 2,684 ft., P.B. 2,655 ft., perf. 2,618-28 ft flowed and went to dry gas, est. 17,500,000 cu. ft.
Crawford County: Page 1 Dennis, W½ NE SE SW 2-6n-13w, 12-in. 84 ft., 10-in. 397 ft., drilling 800 ft.
Douglas County: Ill.-Mid-Cont. 1 J. Braggs, NE NW NE 33-16n-9e, set surface pipe 120 ft.
Fayette County: Interstate Oil 1 Morgan, NW NW NW 36-9n-1w, Osage 2,020 ft., drill pipe stuck at 2,733 ft.
Luttrell 1 Ford, NE NE NW 31-5n-3e, pumped 50 bbl. oil and 6 bbl. water first day, pumped 32 bbl. oil and 14 bbl. water second day, to squeeze.
Franklin County: Daly 1 Collins, NE NE SW 34-7s-2e, base Pennsylvanian 1,525 ft., Kincaid 1,658 ft. Clore 1,714 ft., Palestine 1,735 ft., 12-in. 98 ft., drilling 1,768 ft.
Gallatin County: P. A. Murrelle 1 E. Fitzgibbons, SW SW SW 24-10s-9e, S.D. 1,730 ft.
Delta Drlg. 1 Minier, NE NE NW 28-8s-9e, pumped 33 bbl. in 6 hr., swabbing casing.
Hamilton County: Smokey Oil 1 J. D. Cluck, NE SW SW 18-6s-6e, drilling 3,027 ft.
Politis et al 1 Mayberry, NE NW NE 13-6s-6e, Aux Vases 3,090 ft., 30-min. D.S.T. 3,089-3,105½ ft., gas 13 min., 650 ft. oil and 600 ft. mud, 5-in. 3,090 ft., bailing.
Jasper County: C. L. Ervin 1 H. Garner, SW NW SE 16-6n-8e, S.D. 1,695 ft.
Sinclair 1 B. M. Freeman, E½ NW SW 15-6n-9e, 10-in. 178 ft., drilling 2,250 ft.
Jefferson County: Eason Oil 1 Gilbert, NW NW SE 16-3s-1e, Menard 1,436 ft., Waltersburg 1,485 ft., Vienna 1,550 ft., Tar Springs 1,572 ft., Glen Dean 1,656 ft., Golconda 1,744 ft., Barlow 1,870 ft., Cypress sand 1,920 ft., Paint Creek 1,971 ft., Paint Creek sand 2,051 ft., Benoist 2,096 ft., Aux Vases 2,127 ft., Ste. Genevieve 2,216 ft., Rosiclare 2,246 ft., Fredonia 2,308 ft., drilling 2,381 ft.
H. H. Blair et al 1 Smith, NW SE NW 11-3s-1e, 10-in. 51 ft., drilling 850 ft.
Lawrence County: Midwest Dev. 1 All States Life Ins., SE SE NW 22-2n-11w, drilling 1,509 ft.
Great Central Oil (was Goodknight) et al 1 Patton, NE NW NW 34-3n-12w, junked hole, to skid 20 ft. south.
Richland County: Richey et al 1 Richey, E½ SE SW 23-4n-14w, drilling 1,015 ft.
St. Clair County: G. Morris 1-A V. Rasp, NW NW SW 32-2n-7w, T.D. 2,075 ft., to P.B. and test Devonian at 1,511 ft.
Wabash County: W. O. Allen 1 W. B. Baird, SW SW SE 30-1n-13w, 10-in. 48 ft., S.D. 1,897 ft.
White County: Wall & Mitchell 1 Williams, SE NW NW 27-3s-10e, cleaning out.
Sinclair 1 Smith, SE NW NW 24-4s-10e, 5-qt. shot 2,727-30 ft., swedging casing.
Imperial (was Randall) et al 1 Hubele, S½ NW NW 15-5s-9e, Degonia 2,455 ft., Palestine 2,531 ft., Menard 2,629 ft., Vienna 2,755 ft., Tar Springs 2,768 ft., Glen Dean 2,873 ft., Hardinsburg sand 2,918 ft., drilling 2,995 ft.



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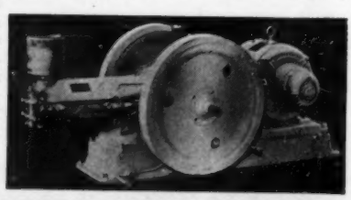

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ROCKY MOUNTAIN AREA

Fault Block Proved for Production at Frannie

By T. R. INGRAM

DENVER, Colo., Sept. 29.—Stanolind Oil & Gas 21-X Rosenberg, on the Frannie dome, Park County, Wyoming, which was completed for 200 bbl. in the Tensleep, proves up approximately 100 acres in a fault block which runs across the top of the structure from the northeast to the southwest. One producer has been drilled south of the block and the others are on the north side.

Valentine M. Kirk is moving in rotary for test on the north dome of the Spring Creek structure in Townships 49 and 50n-102w, west of the Oregon Basin field. Location is not yet available. One well was drilled on the south dome in 1930 which tested the Embar, Tensleep, and Amsden horizons at 4,253 ft., total depth, making 185 bbl. when shut in. In 1937 it was opened and pumped 220 bbl. a day. The north dome has never been tested. It has an independent closure of 800 ft. as compared with 600 ft. for the south dome. The oil is a black crude for which there is an increasing demand for fuel purposes.

SUMMARY OF COMPLETIONS

Wyoming

	No.	Bbl.	Footage
Oil wells: Fields	2	248	8,407
Dry holes: Wildcats	1	.....	4,925
Total	3	.....	13,332

Montana

	No.	Bbl.	Footage
Oil wells: Fields	3	496	8,774
Dry holes: Fields	1	.....	925
Total	4	.....	9,699

Northwest New Mexico

	No.	Bbl.	Footage
Gas wells: Fields	2	*0.45	4,160

*Million cu. ft.

The Montana-Dakota Utilities Co. has made a location in the C NW SE 11-36n-3w, Toole County, Montana, for a test on the West Sunburst nose, where it has acquired 700 acres from R. G. Parrant, who drilled in a small discovery 1¼ miles to the north in 1 Holbrook, C SW NE 2-36n-3w, last year, producing 20 bbl. a day of 44-gravity light oil.

Texas Co. has made a location for 8 Unit, on Wilson Creek, Colorado, for its joint account with the California Co., which will test the northeast flank. It is ¼ mile northeast of 6 Unit, a producer.

The Montana Oil Conservation Board has submitted to Gov. Sam Ford results of a survey made of the Kevin-Sunburst field to aid in determining marketing conditions. It showed 124 operators in the field, 1,214 wells, and a potential of 8,774 bbl. daily as against 4,303 bbl. actually marketed in May 1941, and 4,901 bbl. in June.

COLORADO DRILLING REPORT

Cheyenne County: Elmer E. Whitson et al 1 Christian, C NW SE 12-13s-49w, derrick.
La Plata County: Nick Spatter 1-X Bryce, C SW SW 31-33n-9w, resumed at 4,450 ft., cleaning out.
E. B. Klem 1 Olbert, NW SW 9-35n-12w, T.D. 4,290 ft., fishing tools.
Logan County: Mutual Oil 1 State, C SW SW 32-7n-51w, T.D. 4,840 ft., cemented 5-in. at 4,835 ft., rigging up cable tools to drill into Dakota.
Moffat County: Texas 13 Knowlton, NW NW NW 10-4n-91w, drilling 920 ft., 10¾-in. 119 ft.
Privett & Spangler 1 Stillings, NE SE SE 12-5n-96w, drilling 1,315 ft., gray shale.
Mountain Fuel Supply 2 Lasher, NW NE NE 25-12n-101w, T.D. 3,416 ft., P.B. to 3,320 ft. to test.
Great Divide Petroleum 1 Wyatt, NW NW SE 6-9n-92w, drilling 1,270 ft., rotary tools.
C. R. Privett 1 Sutton, NE NE SW 1-5n-96w, T.D. 2,420 ft., straightening hole at 2,346 ft.
Rio Blanco County: Texas-California 7 Unit, NE SW SE 34-3n-94w, drilling 6,359 ft.
United Oil Producers 1 Hill, Lot 13, 6-1n-101w, S.D. 1,185 ft., temporarily.
Texas-California 8 Unit, NW SW NW 26-3n-94w, location, first report, Wilson Creek.

WYOMING COMPLETIONS

Bison basin, Fremont County: Bison Basin Oil 1 Valentine Kirk, CEL NW SW 17-27n-95w, T.D. 4,925 ft., dry, top Embar 4,280 ft., water, top Tensleep 4,645 ft., dry, Sundance 2,578-2,661 ft.
Frannie field, Park County: Stanolind 21-X Rosenberg, NE SW NW 25-58n-98w, T.D. 3,037 ft., 7-in. 3,030 ft., perf. opposite Tensleep 2,634-46 ft., 200 bbl. a day on pump.
Lance Creek, Niobrara County: Ohio 10 Agnes Rohlff, SE SW NW 32-36n-65w, T.D. 5,370 ft., 7-in. 5,356 ft., pumped 48 bbl. oil, 260 bbl. water from second Leo through perf. in 24 hr. after acid, 500 and 1,000 gal.

WYOMING DRILLING REPORT

Carbon County: Continental Oil 1 Frank M. Johnson, SE SE SW 1-24n-88w, spudding 200 ft. in shale.
Sinclair-Wyoming 27-A Wertz, CSL NW SW 6-26n-89w, derrick.
Ohio Oil 1 Union Pacific, NE NE 33-20n-81w, rigging up rotary.
Sinclair-Wyoming 26-A Wertz, NW SE SE 1-26n-90w (Sweetwater County), rigging up rotary.
Sinclair-Wyoming 1 Mary Carter, NE SE SE 31-25n-88w, rigging up rotary.
Sinclair-Wyoming 5-F Mahoney, C NE NW 34-26n-88w, T.D. 4,512 ft., redrilling 2,981 ft.
Fremont County: Continental Oil 3 Shoshone, CEL SE NE 1-6n-3w, drilling in sand 198 ft., show oil.
Indian Oil 3 Tribal, NW SW NW 23-6n-2w, cemented 8¼-in. 1,480 ft., top Embar 1,438 ft.
Kirk Oil 6 Tribal, CNL NW SW 23-6n-2w, spudded.
Lincoln County: H. C. Harris 1 Government, SE NW NW 23-21n-117w, drilling 3,505 ft. in brown sand topped at 3,480 ft.
Natrona County: Casper Creek Oil 1 State, SW SW NW 36-36n-81w, T.D. 2,640 ft., lowering 5⅛-in. for water shutoff.
Stanolind 21 SD-3, NE SW NW 35-40n-79w, T.D. 2,804 ft., top third Sundance 2,789 ft., waiting on packer.
Iba Dev. Co. No. 1, C NE SE 25-32n-82w, drilling 1,628 ft.
General Petroleum 33-22-P, NW SE NW 22-35n-77w, T.D. 4,636 ft., waiting on pump, top Shannon 4,606 ft.
General Petroleum 17-35-G, NW NE SE 17-35n-77w, spudded.
Niobrara County: Lewis Gokel No. 2, CEL SW SE 2-34n-63w, drilling 510 ft.
Continental 14 Rohlff, NW NW SW 32-36n-65w, drilling 4,839 ft. in lime.
Western Petroleum 1 Mosier, SW SW 31-35n-64w, drilling 2,033 ft., red marker 1,923 ft.
J. L. Berggren 1 fee, SE NW 23-35n-63w, T.D. 2,749 ft. in Bell sand, preparing to test.
Park County: Yale Petroleum 1-B Frisby, NE NE SE 32-52n-100w, spudded.
Husky Refining 4-A Rosseau, NW SE SW 33-51n-100w, rigging up rotary.
Stanolind 11-X Rosenberg, SE NE NE 26-58n-98w, T.D. 3,146 ft., top Embar 2,997 ft., Tensleep 3,050 ft., swabbed 6 bbl. per hr., installing pump.
MacKinnie Oil & Drilling 1 Northern Pacific, CNL NW NW 5-57n-99w, T.D. 1,944 ft., rigging to go to second Frontier and possibly Dakota, reported a completion for 2 bbl. last week.
Sublette County: Texas 3-J Government, NE SW SW 27-27n-113w, T.D. 1,049 ft., reaming.
Texas 2-I Government, SE NW SW 27-27n-113w, location, first report.
Sweetwater County: Sinclair-Wyoming 8 Hughes, SW SW SW 2-26n-90w, drilling 2,035 ft.
Farson Oil & Gas 1 Government, C SE NE 18-25n-108w, drilling 1,497 ft.
Vermillion Oil 1 Government, SW NE NE 6-12n-99w, drilling 2,010 ft.
Weston County: John Brorphy 1 Hansen, NE NE NW 13-44n-63w, water in Muddy 3,140-92 ft.
Western Oil Investors No. 1, NW SW 24-44n-63w, T.D. 3,300 ft., redrilling 2,845 ft., carrying 8⅝-in. 2,805 ft.
Updike Brothers No. 2, NW SW NE 35-46n-64w, set 8¼-in. through Greenhorn.
Hultgren & Thompson 1 Sewall, C SW NW 3-46n-63w, drilling 100 ft., show gas in upper Muddy.
Carl Kundy No. 3, NE NE NW 32-46n-63w, spudded.

MONTANA COMPLETIONS

Cut Bank field, Glacier County: Glacier Production 8 Bonnet, CSL NW NW 4-32n-5w, T.D. 2,919 ft., 7-in. 2,865 ft., Cut Bank 2,865-2,919 ft., main pay 2,900-19 ft., swabbed 300 bbl. first 24 hr., flowed while drilling at 2,916 ft.
M. R. Wagner, trustee, 2 Tribal-184, SE NE NE 13-32n-6w, T.D. 2,852 ft., small show oil in Sunburst 2,750-75 ft., Cut Bank 2,812-52 ft., main pay 2,840-52 ft., 1,200 ft. oil in hole, testing est. 150 bbl.
A. B. Cobb 1 Tribal-202, SE SE NE 24-32n-6w, T.D. 3,003 ft., 7-in. 2,928 ft., Cut Bank 2,946-88 ft., main pay 2,979-88 ft., swabbed 46 bbl.
Kevin-Sunburst field, Toole County: Montana-Dakota Utilities 327 Donovan, C NW SE 31-34n-1w, dry at 925 ft.

MONTANA DRILLING REPORT

Blaine County: Montana Gas 1 Dineen, C NW NW 2-31n-19e, spudded.
Cascade County: Bushford Pet. 1 Shannon-Roberts, C SW NE 12-20n-1e, T.D. 3,300 ft., recovered baller, preparing to run 3-in.
Carbon County: Continental Oil 1 Merrill, SW SW SW 34-9s-25e, T.D. 3,556 ft., P.B. to 3,551 ft., swabbed 50 to 67 bbl. oil and 50 to 56 bbl. water in 24-hr. periods, will drill out cement to bottom, set liner, and perforate.
R. C. Tarrant 2 McKay, C SE NW 4-6s-18e, resumed at 3,057 ft., drilling 3,545 ft. in Chugwater, top 3,060 ft., 5½-in. 3,022 ft.
Fallon County: Carter Oil 1 Northern Pacific, C SE SW 19-4n-62e, drilling 9,194 ft.
Mondakota Dev. Co. No. 3, C NE NE 36-5n-60e, rigging up, first report, Cedar Creek field.
Glacier County: A. B. Cobb 1 Tribal-206, NW NW SW 19-32n-5w, building rig.
R. C. Tarrant 3 Larson, C E½ NW 7-34n-5w, drilling 675 ft., top Colorado 355 ft., 10¾-in. 375 ft.
Texas 3-B Government, NE SW SE 18-32n-5w, moving in.
Texas 4 Lindquist, CNL NW 20-32n-5w, rig.
A. B. Cobb 1 Jeffries-Stufft, CEL SE NE 3-35n-6w, spudded.
Texas 7 Curren, C SE NW 8-32n-5w, drilling 935 ft., top Colorado 595 ft., 10¾-in. 625 ft.
Glacier Prod. 9 Bonnet, SW SE NE 4-32n-5w, rig, first report.
Consolidated Gas 2 Frary-Tribal-208, SE NE SE 24-32n-6w, building rig, first report.
Liberty County: Montana-Dakota Utilities 1 Oswood, C NE SW 18-35n-4e, T.D. 2,925 ft., perf. 1,780-1,800 ft. with 24 shots, 600 ft. water, will run tubing with packer and perf. 2,180-2,244 ft.
Toole County: L. J. Yealy 16 Shaw, NW NW NE 36-2w, drilling 1,475 ft., 8¼-in. 1,060 ft.
Superior Pet. 4-A Government, C SE NW 24-35n-3w, underreaming 10-in. to set at 301 ft.
Washington Oil Finding 1 Unz, C NW SW 9-36n-2w, T.D. 2,077 ft., 10-in. 2,076 ft., 1,000 gal. acid, result black water and gas.
Henry Vander Pas 2 Solberg, SW SW SE 20-35n-3w, T.D. 1,824 ft., cemented 5⅛-in. 1,780 ft.
Pfabe & Engelking 1 Danielson, CNL SE NE 20-35n-3w, drilling 345 ft.
Montana-Dakota Utilities 327 Donovan, C NW SE 31-34n-1w, drilling 925 ft., 10-in. 220 ft.
Imperial-Craig 6 Martin, CEL SE SE 18-35n-1w, drilling 760 ft.
Hat Oil 1 Mitchell, C NE SW 24-37n-3w, T.D. 1,135 ft., landed 10-in. 1,310 ft.
Enfield Oil 6 Zacher, NE SE NW 20-35n-1w, drilling 1,300 ft.
J. H. Agen 1 Goeddertz, C NW SE 16-35n-3w, spudded, first report.
E. O. Reickhoff 1 Reickhoff, C NE SW 3-32n-2w, spudded, first report.
Valley County: Montana-Dakota Utilities 669 Menge, C SE SW 12-31n-34e, cemented 8⅝-in. 136 ft. and S.D., first report, Bowdoin field.
Montana-Dakota Utilities 668 Hight, C NW NW 12-31n-34e, cemented 8⅝-in. 101 ft. and S.D., first report.
Montana-Dakota Utilities 670 Wilde, C NE NW 19-31n-34e, cemented 8⅝-in. 100 ft. and S.D., first report.

NORTHWEST NEW MEXICO COMPLETIONS

Aztec-Bloomfield district, San Juan County: Al Greer 2 Thompson, SW SE SW 10-30n-11w, T.D. 2,362 ft., 200,000 cu. ft. gas in top Picture Cliff 2,200-75 ft., S.I., may drill deeper later.
Wilcox area, Torrance County: Orville J. Lee 1 Milburn, C NW SW 36-7n-7e, T.D. 1,800 ft., 250,000 cu. ft. carbon dioxide gas in sand topped at 1,725 ft., will use for dry ice.

NORTHWEST NEW MEXICO DRILLING REPORT

McKinley County: Ambrosia Investors Synd. 1 Santa Fe, NE NE SW 3-14n-10w, spudded, first report, Ambrosia Lakes district.
Petroleum Products 17 State, NE SE SW 36-18n-9w, drilling 600 ft., first report, Hospah field.

Kansas Fields

(Continued from Page 60)

Hunton 2,281-85 ft., water and oil, recemented and reperforated nearer top of lime.
Ohio 2 Sibbernsen, Account 2, SW SW NW 17-1n-16e, pumped est. 450 bbl. oil and 200 bbl. water, Hunton 2,256 ft., T.D. 2,289 ft.

Two Lower Hunton Wells Completed at Falls City

ST. JOSEPH, Mo., Sept. 29.—In Richardson County, Nebraska, Skelly Oil Co. cored pay in a wildcat north of Falls City and in the neighborhood of Barada. The Ohio Oil Co. brought in 2 Sibbernsen, Account 2, in the Falls City pool and Skelly was drilling 5 Wallraff there. Harry Harper 6 Sibbernsen had too much water in the lower Hunton and was reperforated with better success nearer the top of the lime.

Palensky and Kucers drilled another dry hole in Nemaha County, Nebraska. The county is still without production.

On the Iowa front of the Forest City basin, the Ohio Oil Co. had gone into Mississippian lime in 1 Peterson, wildcat 3 miles north of Red Oak, Montgomery County.

Missouri had another dry hole in the northeastern part of the state, MacAlpine & Carmichael found the Arbuckle at 793 ft. at 1 McKillip.

MISSOURI COMPLETIONS

Wildcats

Knox County: Johnson Oil 1 McReynolds, NE NE SW 10-61n-11w, dry, T.D. 795 ft., Viola 590 ft., St. Peter 683 ft.
Shelby County: MacAlpine & Carmichael 1 McKillip, SE SE SE 35-59n-11w, dry, Hunton 433 ft., Viola 598 ft., St. Peter 700 ft., Arbuckle 793-800 ft.

Needville Prospect Test Shows Distillate in Frio

By NEIL WILLIAMS

HOUSTON, Tex., Sept. 29.—Drilling activity along the Texas Gulf Coast district was being resumed gradually at the end of the week following Tuesday night's storm which forced a complete shutdown of all drilling activity along the entire coast line. Outside of several derricks being blown down in older fields, comparatively little damage to equipment was reported by major and independent companies. Scheduled production tests on three prospective pool openers in Jackson, Fort Bend and Lavaca counties were held up due to the storm, and these were being tested at the end of the week.

Gas-distillate production for the Needville area, Fort Bend County, seemed assured as W. L. Goldston 1 E. M. Coyle, located in the H.&T.C. Survey 39, was flowing an unestimated amount of gas, mud, wash water and some distillate while testing through perforated casing at 5,176-80 ft. Tubing pressure was 425 lb., and shut-in casing pressure 200 lb. Total depth of the hole is 6,463 ft., and 5½-in. casing was cemented at 5,241 ft. Production is from the Frio sand, although additional showings of gas and distillate were logged in the Marginulina section at 4,985-5,023 ft.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	13	2,039	68,208
Gas wells: Fields	2	.....	11,148
Dry holes: Fields	3	.....	22,101
Wildcats	3	.....	20,043
Total	21	.....	121,500

Showings East of Texana Encourage Drilling

Moore & Ahern 1 Burdett, 2 miles east of the Texana field, Jackson County, was drilled to total depth of 6,513 ft.; 5½-in. casing was cemented at 5,315 ft. preparatory to testing at 5,213-18 ft. where a 10-minute drill-stem test the previous week recovered 800 ft. of oil. As the well was being prepared for completion, locations for two offsets were announced. Magnolia Petroleum Co. announced location for 1 E. O. Gilbert, a west offset in Tract 11, while Moore & Ahern made location for 1 Olsovosky, 934 ft. north of 1 Burdett in Tract 7.

Magnolia Wilcox Well Preparing for Test

In the Magnolia area, Montgomery County, Glenn H. McCarthy is moving in a string of 5½-in. casing to be cemented in 1 Sayles, a prospective Wilcox sand pool opener located in the J. S. Scott Survey. Total depth of the hole is 9,754 ft., and the casing is expected to be cemented on bottom to test several showings of oil and gas logged at intervals from 8,400-9,200 ft. In the Lake Creek field, Superior Oil Co. of California 3 McWhorter continues to drill ahead in shale below 12,328 ft. This is the deepest test ever drilled along the upper Texas Gulf Coast and drilling is expected to continue until the entire Wilcox section is penetrated. Stanolind 1 T. A. McWhorter, an offset to production, topped the Ceratobulimina at 6,568 ft., and the Weches at 7,150 ft. It is drilling in shale below 7,895 ft. and should log the top of the Wilcox by the first of the week.

In Grimes County, Oswego 1 W. A. Boney, a wildcat located in the Timothy Jones Survey, was attracting attention as it is rumored that casing will be cemented to test shows of oil and gas in the Wilcox. The Weches was topped at 1,310 ft., Wilcox at 2,015 ft., and the well is shut down at a total depth of 2,803 ft., while side-wall cores are being cut.

Deep Wilcox Sand at Segno Shows Oil

Gulf 48 Wing, located on the south side of the Segno field, Polk County, was perforated at 10,390-10,425 ft., and when the hole was swabbed it began to show gas, wash water and oil between the 5-in. casing and 7-in. casing. The tubing has been pulled and the perforations cemented off. This is the first test in the field to be drilled to the lower Wilcox, and the prospects of opening production seem encouraging.

TEXAS GULF COAST COMPLETIONS

Wildcats

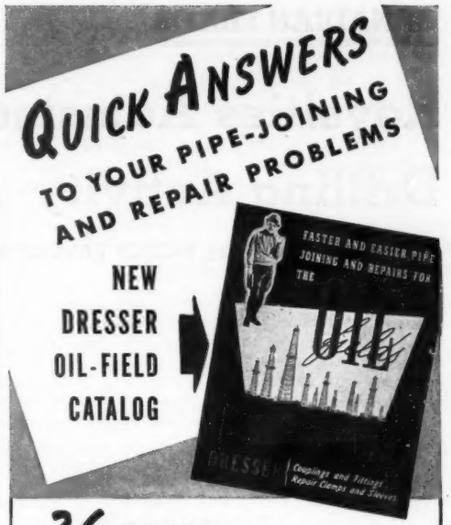
Fort Bend County: Atlantic 1 Groce, dry, T.D. 7,965 ft.
Jackson County: H. McCormick 1 Spencer, dry, T.D. 5,514 ft.
Wharton County: Pure 1 Stockton, dry, T.D. 6,564 ft.

Fields

Blue Ridge, Fort Bend County: G. J. Lee 3 Lusher, 120 bbl., 5/32-in. choke, T.D. 3,259 ft.
Chenango, Brazoria County: Stanolind 2 Brundrett, dry, T.D. 8,603 ft.
Dyersdale, Harris County: Jack Frazier 3 S. M. Dwyer, 292 bbl., ¼-in. choke, perf. casing 4,060-75 ft., T.D. 4,080 ft.
Jack Frazier 1 Modglin, 160 bbl., ¼-in. choke, perf. casing 4,055-70 ft., T.D. 4,077 ft.
Fannett, Jefferson County: Gulf 9 G. W. Junker, 3,000,000 cu. ft. gas, ¼-in. choke, perf. casing 7,790-7,800 ft., T.D. 8,128 ft.
Ganado, Jackson County: Texas 5 Mortgage Investment Co., 127 bbl., ⅛-in. choke, perf. casing 7,790-7,800 ft., T.D. 8,128 ft.
Texas 2 H. Ross, 67 bbl., ⅛-in. choke, perf. casing 6,413-14 ft.
Garwood, Colorado County: W. R. Davis 3-A Brownston, dry, T.D. 10,422 ft.
Lolita, Jackson County: Humble 19-A L. Ranch, 204 bbl., 9/64-in. choke, perf. casing 5,278-85 ft., T.D. 5,294 ft.
Magnolia 14 Mitchell, 204 bbl., 9/64-in. choke, perf. casing 5,278-86 ft., T.D. 5,294 ft.
Markham, Matagorda County: Hamill Drilling Co. 3-A Meyers, 60 bbl., ¼-in. choke, perf. casing 2,310-20 ft., T.D. 2,358 ft.
Maurbro, Jackson County: Humble 6 Robbins, 384 bbl., ¼-in. choke, sand 5,222-36 ft.
Segno, Polk County: Humble 42 Kirby Lumber Co., 52 bbl., ¼-in. choke, top Wilcox 8,046 ft., T.D. 8,195 ft.
Spanish Camp, Wharton County: Houston 2 J. R. Cloud, dry, T.D. 3,076 ft.
Houston Oil Co. 2 Logue, 650,000 cu. ft. gas, ¼-in. choke, perf. casing 2,960-75 ft., T.D. 3,020 ft.
West Ganado, Jackson County: Pure 4 Spacek, 94 bbl., 6/64-in. choke, perf. casing 4,740-60 ft., T.D. 5,513 ft.
Pure 1 Zetka, 132 bbl., ⅛-in. and 7/64-in. choke, perf. casing 4,740-60 ft., T.D. 5,522 ft.
West Ranch, Jackson County: Magnolia 194-A West Ranch, 143 bbl., 7/64-in. choke, perf. casing 5,770-76 ft., T.D. 6,156 ft.

TEXAS GULF COAST DRILLING REPORT

Austin County: Woodley 1 Polschak, S. F. Austin Sur., drilling shale 4,413 ft.
Brazoria County: Humble 1 Colley, J. M. O'Donnell Sur., S.D. 5,757 ft.
Humble 1 Houston Farm Development Co., Perry & Austin Sur., 10¾-in. casing cemented 2,029 ft., T.D. 2,043 ft.
Pure 1 T. L. Smith, J. E. B. Austin Sur., T.D. 6,314 ft.
Skelly 1 Viemann, J. White Sur., S.D. 7,872 ft.
Chambers County: Dick Schwab 1 Ferrell, John Steel Sur., drilling shale 6,580 ft.
Fayette County: M. H. Miller 1 Kerr, J. M. Molino Sur., drilling sandy shale 1,760 ft.
Fort Bend County: Jack Frazier et al 1 Mason & Andrew, Briscoe, John Foster Sur., T.D. 1,235 ft., running 10¾-in. surface casing.
Providence Oil Co. 1 Hruzak, Gail Borden Sur., drilling shale 4,337 ft.
Harris County: J. M. Campbell 1 J. M. Buxbaum, M. Tarin Sur., drilling shale 3,370 ft.
Jackson County: Christie & Dunnam 1 J. E. Pickering, P. S. Scott Sur., S.D. 3,275 ft.
J. G. Mayo 1 First National Bank, R. Musquez Sur., moving in material.
Lavaca County: Normandie Oil Co. 1 Smolik, M. Caldwell Sur., drilling shale 905 ft.
Matagorda County: Barnsdall 1 C. T. Doman, P. Burnett Sur., S.D. 8,653 ft.
Montgomery County: Atlantic 1 Foster Lumber Co., P. Gill Sur., T.D. 10,503 ft., ran electrical survey, drilling ahead.
Polk County: Pan American 1 Texas Long Leaf Lumber Co., A. Viesca Sur., drilling sand and shale 9,168 ft.
Tyler County: Stanolind 1 J. F. Parker, G. T. W. Collins Sur., top Massilina Pratti 4,450 ft., Hockleyensis 4,512 ft., drilling shale and lime 5,057 ft.
Wharton County: Wynn Crosby Drilling Co. 1 Poole, Lissie area, S.D. 8,445 ft.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Royalties Adjusted to Spur Drilling Activity

By VICTOR LAURISTON

CHATHAM, Ont., Sept. 29.—Crude and natural-gasoline production from all Alberta fields for the week ending September 15 averaged 27,741 bbl. daily, compared with 27,518 bbl. daily for the previous week and 27,505 bbl. daily for the corresponding week last year. The daily average included 26,801 bbl. of crude and 690 bbl. of natural gasoline from Turner Valley and 250 bbl. of crude from other fields. There were 162 producing oil wells in Turner Valley and 23 in outside fields, with 27 drilling, 2 finished, 9 testing, 1 shut down, 1 spudded, and 6 drilling licenses issued. Seven abandonment notices were filed.

The mid-September order of the Alberta Conservation Board authorized Turner Valley companies to market 824,291 bbl. of crude for September, or 27,476 bbl. daily. These authorized shipments include 736,655 bbl. regular and war-emergency allowables for September and 87,626 bbl. on hand at leases on September 1. The legal allowable gas production for September has been set at 1,451,409,000 cu. ft.

The largest Turner Valley crude producers in the September schedule are: Home Oil 7, with 24,149 bbl.; Miracle Royalties 1, with 23,616 bbl.; Home Oil 2, with 23,024 bbl., and Alberta Oil Incomes 2, with 20,058 bbl.

TURNER VALLEY LIME TESTS

North Turner Valley: Major Oils 2, LSD 12, 4-21-3w5, T.D. 8,301 ft., Madison at 7,825 ft. made 24 bbl. an hr. before acid treatment, acidizing and testing.

Ace Royalties 1, LSD 5, 4-21-3w5, T.D. 8,834 ft., Madison at 8,335 ft., made 1,116 bbl. daily after acidizing and is testing for official quota.

Miracle Royalties 1, LSD 3, 4-21-3w5, T.D. 8,010 ft., Madison at 7,524 ft. has made as high as 1,081 bbl. daily after acidizing.

Home Oil 9, LSD 9, 15-20-3w5, below 8,083 ft., Madison at 7,974 ft.

West Central section: Argus Royalties 2, LSD 3, 25-19-3w5, T.D. 7,858 ft., Madison at 7,625 ft., acidizing and testing upper zone.

Okalta Oil 11, LSD 10, 24-19-3w5, below 7,850 ft., Madison at 7,752 ft., casing cemented at 7,790 ft.

Renown Royalties 1, LSD 8, 24-19-3w5, T.D. 7,969 ft., Madison at 7,490 ft., acidizing and testing.

Royalite Oil 59, LSD 15, 7-19-2w5, T.D. 7,313 ft., Madison at 6,860 ft., 360 bbl., natural, acidizing and testing.

Southwest field: Northwest-Hudson's Bay 6, LSD 8, 8-18-2w5, below 8,126 ft., Madison at 7,799 ft.

OUTSIDE TESTS

Lethbridge: Lethbridge Petroleum 1, LSD 12, 11-8-22w4, below 4,235 ft., Madison at 4,145 ft., additional small shows of oil and gas with no water, may deepen 800 ft. to test Devonian lime.

Taber: C. B. Magrath 2 Plains Petroleum, installing pump, will ship crude to North Star refinery at Winnipeg.

Twin River: Western Drilling 1, LSD 16, 3-2-20w4, T.D. 3,969 ft., Madison at 3,945 ft., swabbed around 200 bbl. daily water-free crude from lime, installing pump.

Steveville: Standard 2 Princess, P.B. 3,335 ft., shows oil after reconditioning, testing on gas lift.

Standard 3 Princess, LSD 5, 13-20-12w5, T.D. 3,260 ft., Madison at 3,230 ft., making 38 bbl. crude and 28 bbl. water daily.

Imperial Oil geological crews are carrying on survey work in the Little Rock and Meeting Creek areas north of Bashaw.

East Central Alberta

With the encouragement of both the federal and provincial governments, a number of companies will engage in an intensive drilling campaign in East Central Alberta with a view to developing substantial reserves of low-gravity crude for fuel oil. Development will commence in the new Vermilion field, but it is expected drilling will extend to the Lloydminster, Diana-Ribstone, and Wainwright fields, all of which have been producing small quantities of low-gravity crude. Production from the four fields in July totaled 2,421 bbl. from 12 wells, but has since been increased by new completions in the Vermilion field. Fuel oil is required by transcontinental railways and for industrial purposes on the Pacific Coast.

To stimulate development, the Canadian Pacific Railway recently cut in half its usual 12½ per cent royalty on low-gravity crude produced from its lands; and the Alberta government has introduced a new sliding scale of royalties to average around 5 per cent. The regulation limiting drilling to one well for 40 acres has been modified to permit closer locations and consideration is being given to 10-acre spacing for the Vermilion field. Drilling has indicated low-gravity crude can be secured in East Central Alberta at depths varying from 1,800 to 2,200 ft. over large areas, but development has been handicapped by low prices and lack of markets. Efforts are being made to secure a stabilized price of $1 a barrel.

In the Vermilion field Franco-Hamers 3, LSD 10, 19-50-5w4, at 1,840 ft. developed around 100 bbl. flush with 5,000,000 cu. ft. gas, and Franco-Hamers 4, LSD 15, same section, had a similar water-free crude potential with 6,000,000 cu. ft. of gas. Princeville 2 has location in LSD 1, 31-50-5w4.

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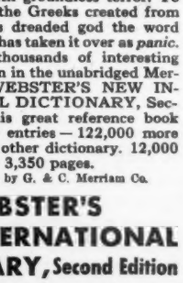

Panic
comes from a mischievous Greek god

IN Greek mythology there was no greater troublemaker among the deities than Pan. His abrupt appearance among the timid wood nymphs inspired the greatest fright. He was regarded also as inspiring human beings with groundless terror. To denote this fear the Greeks created from the name of this dreaded god the word *panikon*. English has taken it over as *panic*. This is one of thousands of interesting word origins given in the unabridged Merriam-Webster, WEBSTER'S NEW INTERNATIONAL DICTIONARY, Second Edition. This great reference book contains 600,000 entries — 122,000 more entries than any other dictionary. 12,000 terms illustrated; 3,350 pages.

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Crude-Oil Prices

TEXAS FLAT-PRICE FIELDS

Agua Dulce, Benavides, Longhorn, Southland and Sweden $1.35
Republic Oil Refining Co., 5-21-41.

Alfred and Magnolia City $1.35
Continental Oil Co., 5-21-41.

Alice, Benavides (North Sweden), Ben Bolt, Clark-Muil, Sun, and Tom Graham $1.35
Humble Oil & Refining Co., 5-21-41.

Batson (new), Humble (35° and above), Fig Ridge, Hardin, Hull (25° and above), La Belle, North Dayton (25° and above), Seabreeze South China, West Orange, Willow Slough and Oyster Bayou $1.25
Sun Oil Co., 5-21-41.

Cass County $1.20
Texas Co., 5-21-41.

Cayuga, Anderson County $0.90
Pan American Production Co., 5-21-41.

Clay Creek, Washington County $1.00
Sun Oil Co., 5-21-41.

Cleveland, Liberty County $1.26
Magnolia Petroleum Co., 5-21-41.

Conroe, Montgomery County $1.43
Humble Oil & Refining Co., 5-21-41.
Tide Water Associated Oil Co., 5-21-41.
Sun Oil Co., 5-21-41.
Texas Co., 5-21-41.

Cotton Lake (South) $1.35
Sun Oil Co., 5-21-41:

East Texas and Flag Lake* $1.25
**Humble Oil & Refining Co.*, 5-21-41.
Pan American Production Co., 5-21-41.
Tide Water Associated Oil Co., 5-21-41.
Gulf Refining Co., 5-21-41.
Magnolia Petroleum Co., 5-21-41.
Sinclair Prairie Oil Marketing, 5-21-41.
Shell Oil Co., Inc., 5-20-41.
Sun Oil Co., 5-21-41.
Texas Co., 5-21-41.
Stanolind Oil Purchasing Co.

Esperson (35° and above), South Esperson $1.30
Sun Oil Co., 5-21-41.

Flour Bluff, East Flour Bluff $1.33
Humble Oil & Refining Co., 5-21-41.

Hockley and Cochran $0.87
Texas Co., 5-21-41.

Livingston $1.25
Shell Oil Co., Inc., 5-20-41.

Long Lake $1.23
Sinclair Prairie Oil Marketing, 5-21-41.

Luby $1.35
Amsco Pipe Line Co., 5-21-41.

Luling $1.05
Magnolia Petroleum Co., 5-21-41.

Lytton Springs $1.17
Magnolia Petroleum Co., 5-21-41.

Salt Flat, North Salt Flat, Darst Creek*, Hilbig, Clark, Carroll, and Zoborski $1.14
Humble Oil & Refining Co., 5-21-41.
Magnolia Petroleum Co., 5-21-41.
**Texas Co.*, 5-21-41.

Rincon (North) $1.35
Sun Oil Co., 5-21-41.

Sun $1.35
Sun Oil Co., 5-21-41.

Talco $0.79
Humble Oil & Refining Co., 5-21-41.
Magnolia Petroleum Co., 5-21-41.

Tomball and Satsuma $1.40
Humble Oil & Refining Co., 5-21-41.
**Magnolia Petroleum Co.*, 5-21-41.
Stanolind Oil Purchasing Co., 4-1-41.

Van, Van Zandt County $1.08
Humble Oil & Refining Co., 5-21-41.
Pure Oil Co., 5-21-41.

Yates (regular) $0.95
Humble Oil & Refining Co., 5-21-41.
Gulf Refining Co., 5-21-41.
Shell Oil Co., Inc., 5-20-41.

Yates (shallow) $0.82
Shell Oil Co., Inc., 5-20-41.

Kentucky

Ashland Oil & Transportation Co., 6-19-41:
Big Sandy River $1.38
Kentucky River 1.43

Sohio Corp., 5-21-41:
Birk City $1.15

Montana

Continental Oil Co., 4-1-41:
Cat Creek $1.15

Colorado

Stanolind Oil & Gas Co., 5-20-41:
Iles $1.07

Continental Oil Co., 5-21-41:
Canon City-Florence $1.05

Canadian Fields

Imperial Oil, Ltd.:
Petrolia, 11-6-39 ..... $2.10
Oil Springs, 11-6-39 ..... 2.07
Bothwell, 11-6-39 ..... 2.10
Turner Valley, 7-16-41 ..... $1.35-1.97

Oil and Gas Lease

UNITED STATES DEPARTMENT OF AGRICULTURE, Forest Service, East Tawas, Michigan, September 24, 1941. Sealed bids in triplicate will be received until 2:00 PM Central Standard time, October 30, 1941, and then publicly opened, offering bonus for operating rights in connection with gas and oil leases on land located in Crawford County, Michigan, described as follows: The S½ of Section 9, except one acre in the SW corner of the SW¼ SW¼, and all of Section 16, T. 25 N, R 1 W. Award of lease will be made only to bidder who can show sufficient experience and financial resources and prove citizenship. Interested parties may obtain bid documents, lease forms, and operating regulations from the Forest Supervisor, Huron National Forest, East Tawas, Michigan.

LEGAL

Department of the Interior, United States Land Office, Cheyenne, Wyoming. Notice is hereby given that the oil and gas deposits in the W½ NE¼ and NE¼ NW¼ Sec. 14, T. 32 N., R. 82 W., 6th P.M., containing 120 acres, in the Iron Creek oil and gas field, Wyoming, are offered as one unit to the responsible qualified bidder of the highest bonus per acre for leasing, pursuant to the provisions of section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in circular 1386. The sale will be held in this office at 10:00 o'clock A.M., on October 28, 1941. The successful bidder must deposit on the date of sale with the Register, a certified check on a solvent bank, or cash, for one-fifth of the amount bid by him, and file a showing of qualifications to receive a lease, required by section 7 of circular 1386. The remaining four-fifths of the amount of the bid, together with the annual rental at the rate of $1 per acre, must be paid, and a $5,000 corporate surety bond furnished prior to the issuance of the lease. A stipulation for the protection of the Kendrick Reclamation Project, a copy of which may be obtained from this office, will be made a part of the lease. Bidders are warned against violations of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Statement of the Ownership, Management, Etc., of

THE OIL AND GAS JOURNAL

October 1, 1941

(This statement is published in compliance with the Act of August 24, 1912.)

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Known bondholders, mortgagees and other security holders holding 1 per cent or more of the total amount of bonds, mortgages or other securities: None.

S. H. ROURKE,
Business Manager.

Sworn to and subscribed before me this 23rd day of September, 1941.

H. R. BARNETT,
Notary Public.

My commission expires October 3, 1941.

Wilcox Trend Play Crosses River Into Mississippi

By R. MARNE SANFORD

JACKSON, Miss., Sept. 29.—There were eight completions in the State of Mississippi the past week, six oil wells in the Tinsley field, one dry hole in Tinsley, and one gas well in the Jackson gas field just outside the town of Jackson. There were nine new locations in the Tinsley field and one new wildcat location in Lauderdale County.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Tinsley	6	3,308	29,297
Gas wells: Jackson	1	*20.0	2,458
Dry holes: Tinsley	1	.....	5,041
Total	8	.....	36,796

*Million cu. ft.

Hundreds of thousands of acres have been leased and still more is under options throughout Wilkinson, Amite, Adams and Franklin counties in the extreme southwestern corner of the state. The increasingly active Wilcox play in Central Louisiana has swung eastward into this corner of the state. Very few tests in the sector have ever drilled through the Wilcox formation, however, many have entered the top of the zone and halted. Preparations are under way at several points in Wilkinson County to drill new Wilcox exploratory holes and also to reenter some of the old failures and deepen them.

Tinsley Extension on Close Spacing

Eight of these nine new Tinsley field locations were in the new producing extension area. All of them were staked on 10-acre tracts, the northern part of the field being on 40-acre spacing. With eight new locations on scattered 10-acre tracts for the southern part of the field, considerable offset and protective drilling is expected to follow immediately.

As of September 29 there were 256 oil wells in the Tinsley field, only 16 of which were flowing, the remainder being original pumping wells or flush wells settled to pumpers. The pressures in the Tinsley field have been dissipated badly, however, not a great deal of concern is felt for the future of the field since it offers such wonderful opportunities for becoming the ideal pumping-well field. There are no paraffin problems and practically no corrosive action of the rods. This fact, however, is a result rather than a reason for the dissipated field pressures.

MISSISSIPPI COMPLETIONS

Jackson, Hinds County: City of Jackson 5 State fee, NE SE SE 26-6n-1e, T.D. 2,458 ft., top porosity 2,457 ft., making estimated 20,000,000 cu. ft. gas.

Tinsley, Yazoo County: Amerada 5 Tom Stutts, SW NW¼ 36-10n-3w, T.D. 4,669 ft., Woodruff 4,601-37 ft., perf. casing 4,600-38 ft., pumped 102 bbl. in 4 hr.

Beckett & Bridwell 3 Maggie Hart, SW NE NW NE 36-10n-3w, T.D. 5,005 ft., Woodruff 4,995-97 ft., pumped 520 bbl.

Fred Endom 1 State School Land, SW NE 16-9n-3w, T.D. 5,633 ft., top Cane River 1,785 ft., Wilcox 2,290 ft., Tallahatta 3,035 ft., Midway 4,587 ft., Selma 5,475 ft., dry.

Kirby Pet. 5 G. W. Stutts, NW SE 30-10n-2w, T.D. 5,041 ft., Woodruff 4,987-5,037 ft., pumped 510 bbl.

Magnolia 7 Mitch Payne, SE NE SE 35-10n-3w, T.D. 4,770 ft., Woodruff 4,740-67 ft., pumped 310 bbl.

Sinclair Wyoming Oil 5 M. F. Sorrells, SE NW SW 29-10n-2w, T.D. 5,078 ft., Woodruff 4,987-5,050 ft., pumped 444 bbl. in 17½ hr.

Union Oil 1 Stevens-Slick, NE NW NE 10-11n-3w, T.D. 4,734 ft., Woodruff 4,706-13 ft., pumped 260 bbl. in 8 hr.

MISSISSIPPI WILDCAT REPORT

Copiah County: Sun Oil 1 J. G. Ainsworth, N½ NW SE 17-9n-7e, 16-in. 90 ft., 10¾-in. 1,416 ft., drilling 3,006 ft.

Grenada County: H. T. Salter 1 Carpenter, NE SE 6-21n-7e, rigging up rotary (correction from last report).

Kemper County: Darrel C. Williams 1 McKelvain, SE NE 2-9n-17e, top Selma 724 ft., Eutaw 1,400 ft., Tuscaloosa 1,960 ft., show gas 2,175 ft., drilling 2,640 ft.

Lauderdale County: Pierce Watters 1 A. L. Meeds, C W½ SW 26-5n-15e, rng. surface casing.

Lawrence County: Tide Water 1 Denman Lbr. Co., N½ SW 5-5n-11e, drilling 6,874 ft.

Sharkey County: British American Oil 1-A Houston, NW NE SW 23-11-7w, pumped 156 bbl. oil and 350 bbl. water in 4 days, pumping 8 hr. per day, now pumping into 10,000-bbl. tank ungaged.

Stone County: H. I. Morgan 1 University of Mississippi, C SE 35-3s-10w, sand breaks last 600 ft., all carrying salt water, drilling 7,850 ft.

Warren County: Magnolia 1 H. Hall, NE NW NE irregular 39-17n-4e, location.

Yazoo County: Kirby Pet. and Woodley Pet. 1 State, SE SE NE 16-10n-3w, drilling 2,030 ft.

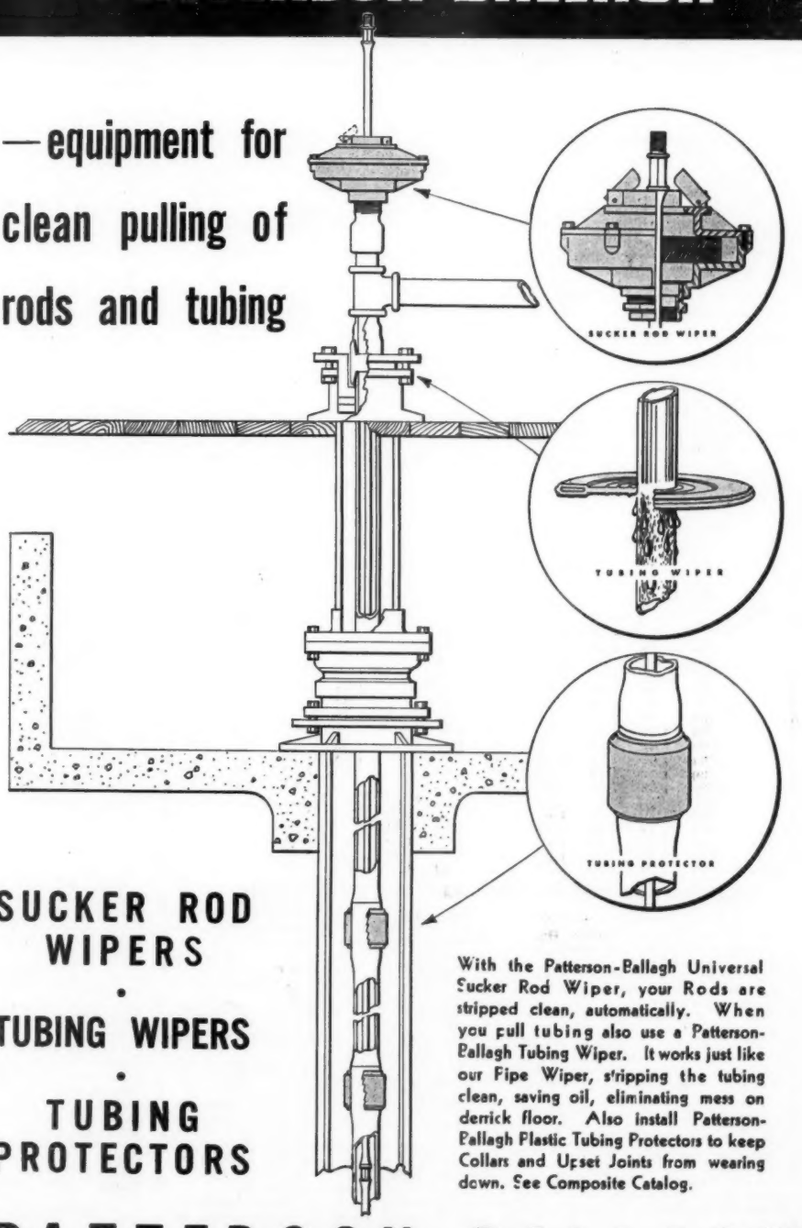
Alabama Deep Test Nears 12,000 Ft.

Union Producing Co.'s 1 Waite, NW 27-8n-1w, Clarke County, was last reported drilling ahead below 11,904 ft. About 2 weeks ago a tentative top of the Pottsville formation was called at 11,700 ft. and now a similar top has been called for the anhydrite at 11,800 ft.

A new wildcat operation for Alabama is pending in Covington County where Strake Petroleum Co. is asking for bids for an 8,000-ft. exploratory test to be staked either in Sections 9, 10 or 11 of Township 2n, Range 14e. It will be on a 20,000-acre block which has been undergoing seismograph exploration for the past 4 months.

PATTERSON-BALLAGH

—equipment for clean pulling of rods and tubing



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CRUDE-OIL PRICES . . .

OKLAHOMA AND KANSAS GRAVITY TABLES

	1	2	3	4	5	6	7	8
Below 21	....	....	....	....	$.85	$.75	....	$.70
21-21.9	....	....	....	....	.87	.78	....	.73
22-22.9	....	....	....	....	.89	.81	....	.76
23-23.9	....	....	....	....	.91	.84	....	.79
24-24.9	....	....	....	....	.93	.87	....	.82
Below 25	$.93	....	....	$.86	....	....	....	....
25-25.9	.95	.95	....	.88	.95	.90	....	.85
26-26.9	.97	.97	....	.90	.97	.93	....	.88
27-27.9	.99	.99	....	.92	.99	.96	....	.91
28-28.9	1.01	1.01	1.01	.94	1.01	.99	....	.94
29-29.9	1.03	1.03	1.03	.96	1.03	1.02	....	.97
30-30.9	1.05	1.05	1.05	.98	1.05	1.05	$1.05	1.00
31-31.9	1.07	1.07	1.07	1.00	1.07	1.07	1.07	1.02
32-32.9	1.09	1.09	1.09	1.02	1.09	1.09	1.09	1.04
33-33.9	1.11	1.11	1.11	1.04	1.11	1.11	1.11	1.06
34-34.9	1.13	1.13	1.13	1.06	1.13	1.13	1.13	1.08
35-35.9	1.15	1.15	1.15	1.08	1.15	1.15	1.15	1.10
36-36.9	1.17	1.17	1.17	1.10	1.17	1.17	1.17	1.12
37-37.9	1.19	1.19	1.19	1.12	1.19	1.19	1.19	1.14
38-38.9	1.21	1.21	1.21	1.14	1.21	1.21	1.21	1.16
39-39.9	1.23	1.23	1.23	1.16	1.23	1.23	1.23	1.18
40 and above	1.25	1.25	1.25	1.18	1.25	1.25	1.25	1.20

OKLAHOMA AND KANSAS TABLE EXPLANATION

COLUMN (1) MID-CONTINENT GRADES:
Pure Oil Co., 5-20-41.
Gulf Oil Corp., 5-20-41.
Skelly Oil Co. (Kansas only), 5-19-41.
H. F. Wilcox Oil & Gas Co., 5-20-41.

COLUMN (2) MID-CONTINENT GRADES:
White Eagle Oil Purchasing Co., Inc., 5-19-41, Kansas only.
Sinclair Prairie Oil Marketing Co., 5-20-41.

COLUMN (3) MID-CONTINENT GRADES:
Continental Oil Co., 5-19-41.
Phillips Petroleum Co., 5-19-41.
Tide Water Associated Oil Co., 5-20-41.

COLUMN (4) JACKSON, TILLMAN COUNTIES:
Gulf Oil Corp., 5-20-41.

COLUMN (5) MID-CONTINENT GRADES:
Standard Oil Co., (Indiana), 5-20-41.
National Refining Co., 5-20-41.

COLUMN (6) MID-CONTINENT GRADES:
Magnolia Petroleum Co., 5-21-41.
Shell Oil Co., Inc., 5-19-41.

COLUMN (7) OKLAHOMA:
Champlin Refining Co., 5-20-41.

COLUMN (8) CARTER COUNTY, OKLAHOMA including Healdton, Oscar, Spring and Seay.
Shell Oil Co., Inc., 5-19-41.
Ben Franklin Refining Co., 5-20-41.

OKLAHOMA FLAT PRICE

Cumberland $1.14
Pure Oil Co., 9-4-41.

MIDDLE WEST FLAT PRICES

Illinois and Indiana

Ohio Oil Co.:
Illinois basin, 5-21-41 ..... $1.37
Eastern Illinois, 5-21-41 ..... 1.22
Western Indiana, 5-21-41 ..... 1.22

Magnolia Petroleum Co.:
Illinois basin, 5-21-41 ..... $1.37
Carter Oil Co.:
Illinois (Louden), 5-21-41 ..... $1.37
Sohio Corp.:
Illinois basin, 5-21-41 ..... $1.37
Texas Co.:
Illinois basin, 5-21-41 ..... $1.37
Gulf Refining Co.:
Illinois basin, 5-21-41 ..... $1.37

Michigan

Simrall Corp., 5-27-41:
Greendale, Porter, Vernon, Crystal, and Wise $1.44
Buckeye, Bentley, Edenville, Beaverton, and Monitor (sweet) 1.42
Freeman, Redding, Lincoln, and Winterfield 1.39
Hamilton-Grout 1.29
West Branch-Arenac 1.24
Sohio Corp., 5-1-41:
Bloomingdale-Columbia $1.38
Mid-West Refineries, Inc., 5-1-41:
Kent County $1.38
Pure Oil Co., 5-27-41:
Sherman $1.39
Midland (Midland County) $1.44

OTHER PRICES

Flat-price quotations for Kentucky, Montana, Colorado, Texas and Canadian fields found on Page 95 of this issue.

EASTERN STATES

Pennsylvania and Ohio

South Penn Oil Co.:
National lines, 8-23-41 ..... $2.75
Southwest Penn, 8-23-41 ..... 2.40
Eureka lines, 8-23-41 ..... 2.34
Corning grade, 5-27-41 ..... 1.31
Tide Water Associated Oil Co.:
Bradford, 8-23-41 ..... 2.75
Allegany, N. Y., 8-23-41 ..... 2.75
Pennzoil Co.:
Group A, 8-23-41 ..... 2.68
Group B, 8-23-41 ..... 2.67
Group C, 8-23-41 ..... 2.66
Group D, 8-23-41 ..... 2.65
Group E, 8-23-41 ..... 2.63
Quaker State Oil Refining Corp:
In Buckeye lines, 8-23-41 ..... 2.30
In Eureka lines, 8-23-41 ..... 2.34

West Virginia

Pure Oil Co.:
Cabin and Kelly Creek, 8-23-41 $2.34

LOUISIANA AND SOUTHERN ARKANSAS GRAVITY TABLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Below 18	....	....	....	....	....	....	....	....	....	....	....	....	$.94	....	....	....	....	....
18-18.9	....	....	....	....	....	....	....	....	....	....	....	....	.96	....	....	....	....	....
19-19.9	....	....	....	....	....	....	....	....	....	....	....	....	.98	....	....	....	....	....
Below 20	....	....	....	....	....	....	....	$1.06	....	$.94	$.99	$.89	....	....	$1.06	....	....	....
20-20.9	....	....	....	....	....	....	....	1.08	....	.96	1.01	.91	1.00	....	1.08	....	....	....
Below 21	$.68	....	....	$.90	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....
21-21.9	.70	....	....	.92	....	....	....	1.10	....	.98	1.03	.93	1.02	.92	1.10	....	....	....
22-22.9	.72	....	....	.94	....	....	....	1.12	....	1.00	1.05	.95	1.05	.94	1.12	....	....	....
23-23.9	.74	....	....	.96	....	....	....	1.14	....	1.02	1.07	.97	1.08	.96	1.14	....	....	....
24-24.9	.76	....	....	.98	....	....	....	1.16	....	1.04	1.09	.99	1.11	.98	1.16	....	....	....
Below 25	....	$.86	$.98	....	....	$.88	....	....	....	....	....	....	....	....	....	....	....	....
25-25.9	.78	.88	1.00	1.00	....	.90	....	1.18	....	1.06	1.11	1.01	1.14	1.00	1.18	....	....	....
26-26.9	.80	.90	1.02	1.02	....	.92	....	1.20	....	1.08	1.13	1.03	1.17	1.02	1.20	....	....	....
27-27.9	.82	.92	1.04	1.04	....	.94	....	1.22	....	1.10	1.15	1.05	1.19	1.04	1.22	....	....	....
28-28.9	.84	.94	1.06	1.06	....	.96	....	1.24	....	1.12	1.17	1.07	1.21	1.06	....	$1.14	$1.06	....
29-29.9	.86	.96	1.08	1.08	....	.98	....	1.26	....	1.14	1.19	1.09	1.23	1.08	....	1.16	1.08	....
30-30.9	.88	.98	1.10	1.10	$1.26	1.00	....	1.28	....	1.16	1.21	1.11	1.25	1.10	....	1.18	1.10	$1.05
31-31.9	.90	1.00	1.12	1.12	1.28	1.02	....	1.30	$1.07	1.18	1.23	1.13	1.27	1.12	....	1.20	1.12	1.07
32-32.9	.92	1.02	1.14	1.14	1.30	1.04	....	1.32	1.09	1.20	1.25	1.15	1.29	1.14	....	1.22	1.14	1.09
33-33.9	.94	1.04	1.16	1.16	1.32	1.06	....	1.34	1.11	1.22	1.27	1.17	1.31	1.16	....	1.24	1.16	1.11
34-34.9	.96	1.06	1.18	1.18	1.34	1.08	....	1.36	1.13	1.24	1.29	1.19	1.33	1.18	....	1.26	1.18	1.13
35-35.9	.98	1.08	1.20	1.20	1.36	1.10	....	....	1.15	....	....	....	....	1.20	....	1.28	1.20	1.15
Below 36	....	....	....	....	....	....	$1.07	....	....	....	....	....	....	....	....	....	....	....
36-36.9	1.00	1.10	1.22	1.22	....	1.12	1.09	....	1.17	....	....	....	....	1.22	....	1.30	1.22	1.17
37-37.9	1.02	1.12	1.24	1.24	....	1.14	1.11	....	1.19	....	....	....	....	....	....	....	....	1.19
38-38.9	1.04	1.14	1.26	1.26	....	1.16	1.13	....	1.21	....	....	....	....	....	....	....	....	1.21
39-39.9	1.06	1.16	1.28	1.28	....	1.18	1.15	....	1.23	....	....	....	....	....	....	....	....	1.23
40 & above	1.08	1.18	1.30	1.30	....	1.20	1.17	....	1.25	....	....	....	....	....	....	....	....	1.25

LOUISIANA AND SOUTHERN ARKANSAS TABLE EXPLANATION

Standard Oil Co. of Louisiana, 5-22-41.
COLUMN (1) applies to Atlanta, Buckner, Magnolia, Schuler (Jones sand), Village and Lewisville fields.
COLUMN (2) applies to Caddo, De Soto, Sabine, Fouke, Homer, Miller County, Sugar Creek and Nebo.
COLUMN (3) applies to Bunkie, Eola, Olla and South Olla.
COLUMN (4) applies to Bayou Mallet, Choctaw, Darrow, Jeanerette, Lirette, North Crowley, South Crowley, Port Barre, Potash, Roanoke, St. Martinville and Port Allen.
COLUMN (5) applies to University (Baton Rouge).
COLUMN (6) applies to Cotton Valley crude, Rodessa and Shreveport (Cross Lake); also Anse La Butte, effective 8-1-41, starting at 80 cents for below 21°.
Continental Oil Co., 5-21-41.
COLUMN (7) applies to Abbeville, Louisiana.
Continental Oil Co., 5-21-41.
Stanolind Oil & Gas Co., 5-21-41.
COLUMN (8) applies to East and West Hackberry.
COLUMN (2) applies to Caddo Parish.
COLUMN (9) applies to Evangeline, Acadia Parish.
Lion Oil Refining Co., 5-22-41.
COLUMN (1) applies to Reynolds lime, Jones sand, Schuler, Ark.

COLUMN (2) applies to El Dorado, West and South Rainbow fields, Snow Hill and Schuler-Morgan sand.
Placid Oil Co., 5-22-41.
COLUMN (3) applies to Olla.
COLUMN (2) applies to Nebo field.
Shell Oil Co., Inc., 5-20-41.
COLUMN (10) applies to Roanoke, Chalkley.
COLUMN (11) applies to Iowa, Black Bayou, White Castle.
COLUMN (12) applies to Gibson, South Houma, Hester, West Lake Verret.
Magnolia Petroleum Co., 5-21-41.
COLUMN (13) applies to Lockport, Cameron Meadows, and West Gueydan, La.
COLUMN (6) applies to Haynesville, Cotton Valley, Rodessa, La., and Miller County, Arkansas.
Phillips Petroleum Co., 3-29-41.
COLUMN (1), Schuler (Jones sand), except schedule starts at 76 cents for below 25° gravity.
Gulf Refining Co., 5-21-41.
COLUMN (9), Jennings.
COLUMN (8), Edgerly, Starks, Vinton, East Hackberry, Cameron Meadows, Leesville.
COLUMN (16) applies to Grand Bay, Quarantine Bay, Timbalier Bay and West Bay, except schedule starts at $1.12 for below 28° gravity.

COLUMN (6) applies to Caddo, Homer, Bull Bayou, Crichton, De Soto, Haynesville and El Dorado.
Pure Oil Co. 4-22-41.
COLUMN (14) applies to Gueydan crude.
COLUMN (6), Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, and El Dorado.
Texas Co., 5-21-41.
COLUMN (6) applies to North Louisiana.
COLUMNS (15) and (16), Bay St. Elaine, Caillou Island, Iberia, Lake Barre, Lake Pelto, Leesville, Port Barre. (Schedules A and B).
COLUMN (17), Bateman Lake, Dog Lake, Fausse Point, Horseshoe Bayou, Jefferson Island, Plumb Bob, Vermilion Bay, West Cote Blanche and Delta Duck Club.
COLUMN (18), Delta Farm, Lake Salvador, Golden Meadow.

LOUISIANA AND ARKANSAS FLAT PRICES

Continental Oil Co., 5-21-41:
Tepetate and Lake Arthur $1.18
Ville Platte 1.20
Gulf Refining Co., 5-21-41:
Smackover (Ark.) $0.83
Lion Oil Refining Co., 5-22-41:
Smackover (heavy) $0.83
Dorchest 1.15
Phillips Petroleum Co., 5-22-41:
Smackover (heavy) $0.83
Placid Oil Co., 5-22-41:
Tullos-Urania (5-21-41) $1.15
Cotton Valley dist. (above 60°) 1.30
Cotton Valley (Holloway sand) 1.25
Cotton Valley (Bodcaw-D sands) 1.20
Pure Oil Co.:
Bosco (5-21-41) $1.14
Sweet Lake (5-22-41) 1.06
Creole (5-22-41) 1.16
Republic Oil Co., 6-2-41:
Nevada County, Arkansas $0.80
Shell Oil Co., Inc., 5-20-41:
Happytown $1.15
Standard Oil Co. of Louisiana, 5-22-41:
Big Creek, Dorcheat, McKamie (sour) $1.15
Smackover (heavy) ..... .83
Cotton Valley distillate (9-1-41) 1.40
Cotton Valley (Holloway sand) 1.25
Lisbon distillate 1.20
Republic Oil Refining Co., 5-21-41:
Bayou Pigeon $1.20
Texas Co., 5-21-41:
Erath $1.21
Garden Island 1.36
Lafitte, Paradis 1.19
Lake Mongoulois 1.36

ROCKY MOUNTAIN GRAVITY TABLE

Below 29 ..... $0.96
29-29.9 ..... .98
30-30.9 ..... 1.00
31-31.9 ..... 1.02
32-32.9 ..... 1.04
33-33.9 ..... 1.06
34-34.9 ..... 1.08
35-35.9 ..... 1.10
36-36.9 ..... 1.12
37-37.9 ..... 1.14
38-38.9 ..... 1.16
39-39.9 ..... 1.18
40 and above 1.20

Stanolind Oil & Gas Co., 5-20-41, includes Dutton Creek, Midway and Salt Creek except Tensleep crude, Wyoming.
Sinclair Wyoming Oil Co., 5-20-41, includes Salt Creek and Lost Soldier, except Tensleep crude, Wyoming.
Continental Oil Co., 5-21-41, includes Fort Collins and Wellington, Colorado.

Wyoming

Ohio Oil Co.:
Rock River (5-20-41) $1.15
Lance Creek (7-1-41) 1.12
Elk Basin and Grass Creek (light) 1.00
Stanolind Oil & Gas Co., 5-20-41:
Frannie (light) ..... .70
Frannie (heavy) ..... .47
Grass Creek (light) 1.00
Grass Creek (heavy) ..... .50
Hamilton Dome ..... .45
Elk Basin 1.00
Salt Creek (Tensleep) ..... .6785
Continental Oil Co.:
Big Muddy (5-30-41) $1.08
Lance Creek (9-1-41) 1.12

TEXAS GULF COAST GRAVITY TABLES

	(1)	(2)	(3)	(4)	(5)
Below 20	$1.06	$1.06	....	$.98	$.93
20-20.9	1.08	1.08	....	1.00	.95
Below 21	....	....	$1.08	....	....
21-21.9	1.10	1.10	1.10	1.02	.97
22-22.9	1.12	1.12	1.12	1.04	.99
23-23.9	1.14	1.14	1.14	1.06	1.01
24-24.9	1.16	1.16	1.16	1.08	1.03
25-25.9	1.18	1.18	1.18	1.10	1.05
26-26.9	1.20	1.20	1.20	1.12	1.07
27-27.9	1.22	1.22	1.22	1.14	1.09
28-28.9	1.24	1.24	1.24	1.16	1.11
29-29.9	1.26	1.26	1.26	1.18	1.13
30-30.9	1.28	1.28	1.28	1.20	1.15
31-31.9	1.30	1.30	1.30	1.22	1.17
32-32.9	1.32	1.32	1.32	1.24	1.19
33-33.9	1.34	1.34	1.34	1.26	1.21
34-34.9	1.36	1.36	1.36	1.28	1.23
35-35.9	1.38	....	1.38	1.30	1.25
36-36.9	1.40	....	1.40	1.32	1.27
37-37.9	1.42	....	1.42	1.34	1.29
38-38.9	1.44	....	1.44	1.36	1.31
39-39.9	1.46	....	1.46	1.38	1.33
40 and above	1.48	....	1.48	1.40	1.35

TEXAS GULF COAST GRAVITY TABLE EXPLANATION

COLUMN (1):
Humble Oil & Refining Co., 5-21-41, includes Amelia, Clear Lake, Goose Creek, Hastings, Magnet, Mykawa (new), Raccoon Bend, South Thompsons, Sugarland, Thompsons, and Webster fields.
Stanolind Oil & Gas Co., 5-21-41, includes West Beaumont, High Island and Spindletop.
Sinclair Prairie Oil Marketing Co., 5-21-41.
Stanolind Oil Purchasing Co., 4-1-41, includes Clinton where schedule starts at 98 cents for below 21°, regular thereafter.
Pure Oil Co., 4-21-41, includes Louise and Ganado.
Gulf Refining Co., 5-21-41, includes Spindletop, Sour Lake, Lovells Lake, West Beaumont, Goose Creek, South Liberty, Big Creek, Blue Ridge, Fannett, Moore, Barbers Hill, Hankamer, Thompson, Lochridge, Dyersdale, and Hull (old).
Sun Oil Co., 5-21-41, includes Barbers Hill, Batson (old), Bayou Blue, Chacahoula, Cotton Lake, Esperson (below 35° gravity), Fausse Pointe, Goose Creek, Greens Lake, Hackberry (east and west), Hull (below 25°), Humble (below 35°), Nome, North Dayton (below 25°), Orange, Saratoga, Sour Lake, South Liberty and Vinton.
COLUMN (2):
Texas Co., 5-21-41, includes Arriola, Ganado, Hamman, Hillje, Humble, Kubela, Magnet, Manvel, Markham, Mau-

ritz, Old Ocean, Pickett Ridge, Port Neches, Sour Lake, West Columbia, and Witherg.
COLUMN (3):
Pan American Production Co., 5-21-41, includes Hastings and South Houston.
Stanolind Oil & Gas Co., 4-1-41, includes High Island, Spindletop, Hastings, and South Houston.
COLUMN (4):
Humble Oil & Refining Co., 5-21-41, includes Anahuac, Angleton, Cedar Point, Fishers' Reef, Hull (new and old), Pierce Junction, Red Fish Reef, and Turtle Bay.
Gulf Refining Co., 5-21-41, includes Anahuac, Hull (new), Thompson (deep), Pierce Junction, and Orange.
Sun Oil Co., 5-21-41, includes Anahuac, Caplen and Turtle Bay.
Humble Oil & Refining Co., 3-29-41, includes Dickinson, Gillock, Hardin, League City, and Rowan.
Stanolind Oil & Gas Co., 5-21-41, includes Fairbanks, North Houston, and Rosyln.
COLUMN (5):
Pan American Production Co., 5-21-41, includes Gillock, except scale starts at 95 cents below 21°.

SOUTH TEXAS AND SOUTHWEST TEXAS GRAVITY TABLES

	1	2	3	4	5	6	7
Below 20	$1.03	$1.08	$1.08	$.89	$1.03	$1.03	$1.08
20-20.9	1.05	1.10	1.10	.90	1.05	1.05	1.10
21-21.9	1.07	1.12	1.12	.91	1.07	1.07	1.12
22-22.9	1.09	1.14	1.14	.92	1.09	1.09	1.14
23-23.9	1.11	1.16	1.16	.93	1.11	1.11	1.16
24-24.9	1.13	1.18	1.18	.94	1.13	1.13	1.18
25-25.9	1.15	1.20	1.20	.95	1.15	1.15	1.20
26-26.9	1.17	1.22	1.22	.96	1.17	1.17	1.22
27.27.9	1.19	1.24	1.24	.97	....	1.19	1.24
28-28.9	1.21	1.26	1.26	.98	....	1.21	1.26
29-29.9	1.23	1.28	....	.99	....	....	1.28
30-30.9	1.25	1.30	....	1.00	....	....	1.30
31-31.9	1.27	1.32	....	1.01	....	....	1.32
32-32.9	1.29	1.34	....	1.02	....	....	1.34
33-33.9	1.31	1.36	....	1.03	....	....	1.36
34-34.9	1.33	1.38	....	1.04	....	....	1.38
35-35.9	1.35	1.40	....	1.05	....	....	1.40
36-36.9	1.37	1.42	....	1.06	....	....	....
37-37.9	1.39	1.44	....	1.07	....	....	....
38-38.9	1.41	1.46	....	1.08	....	....	....
39-39.9	1.43	1.48	....	1.09	....	....	....
40 and above	1.45	1.50	....	1.10	....	....	....

SOUTH AND SOUTHWEST TEXAS TABLE EXPLANATION

COLUMN (1) MIRANDO:
Humble Oil & Refining Co., 5-21-41, includes Blanchard, Bridwell, Colorado, Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (North and South), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, and Tesoro.
Magnolia Petroleum Co., 5-21-41.
Continental Oil Co., 7-1-41. Includes Hoffman, Government Wells (North and South), Lopez, Moco, Colmena, Seven Sisters, South Seven Sisters, Loma Novia, Conoco Driscoll, O'Hern, Piedre Lumbre, and Taranchauas.
Amsco Pipe Line Co., 5-21-41, includes Adami and Munson.
Republic Oil Refining Co., 5-21-41, includes Heyser field crude.
COLUMN (2) REFUGIO:
Continental Oil Co., 7-1-41, includes Minnie Bock, Clara Driscoll, South Clara Driscoll, Driscoll Ranch, Orange Grove, and Wade City.
Humble Oil & Refining Co., 5-21-41, includes East White Point, Greta, Melon Creek, O'Connor-McFaddin, Plymouth, Saxet, Taft, and Tom O'Connor.
Amsco Pipe Line Co., 5-21-41, includes Plymouth, Taft, and East White Point.
COLUMN (3) REFUGIO:
Texas Co., 5-21-41, includes Greta, Saxet, and Taft.
COLUMN (4) LA ROSA:
Amsco Pipe Line Co., 3-29-41.
COLUMN (5) DUVAL-MIRANDO:
Sun Oil Co., 5-21-41.
COLUMN (6) DUVAL-MIRANDO:
Texas Co., 5-21-41.
COLUMN (7) NUECES COUNTY:
Amsco Pipe Line Co., 5-21-41.
Republic Oil Refining Co., 5-21-41.

WEST TEXAS, PANHANDLE AND NEW MEXICO TABLE EXPLANATION

COLUMN (1):
Humble Oil & Refining Co., 5-21-41, includes Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler, and Yoakum counties, West Texas, and Lea County, New Mexico.
Gulf Refining Co., 5-21-41, includes Crane, Ector, Upton, Ward, and Winkler counties, West Texas.
COLUMN (2):
Sinclair Prairie Oil Marketing Co., 5-21-41, includes West Texas and Lea County, New Mexico. Effective 5-29-41 in Eddy County, New Mexico.
Magnolia Petroleum Co., 5-21-41, includes Upton, Howard, Glasscock, Mitchell, Winkler, Cochran, Hockley, Yoakum and Gaines counties.
COLUMN (3):
Texas Co., 5-21-41, includes Crane and Winkler counties, Texas, and Lea County, New Mexico.
COLUMN (4) TEXAS PANHANDLE:
Magnolia Petroleum Co., 7-9-41.
Continental Oil Co., 7-9-41.
Phillips Petroleum Co., 7-9-41.
COLUMN (5) WINKLER AND LEA:
Stanolind Oil & Gas Co., 5-21-41, includes Winkler County only.
Gulf Refining Co., 5-21-41, includes Lea County, New Mexico, only.
COLUMN (6) GRAY COUNTY:
Texas Co., 5-21-41.
H. F. Wilcox Oil & Gas Co. (7-9-41).
COLUMN (7) LEA COUNTY:
Magnolia Petroleum Co., 5-21-41.
COLUMN (8) EDDY COUNTY:
Continental Oil Co., 5-30-41.
COLUMN (9):
Shell Oil Co., Inc., 5-20-41, includes Crane, Ector, Howard, Glasscock, Upton, Winkler, and Yoakum counties, Texas, and Lea County, New Mexico.
COLUMN (10) TEXAS PANHANDLE:
Humble Oil & Refining Co., 7-9-41.
COLUMN (11) PANHANDLE:
Sinclair Prairie Oil Marketing Co., 5-23-41.

WEST TEXAS, PANHANDLE, AND NEW MEXICO GRAVITY TABLES

	1	2	3	4	5	6	7	8	9	10	11
Below 20	$0.70	....	....	....	....	....	....	....	$0.70	$.73	....
20-20.9	.72	....	....	....	....	....	....	....	.72	.75	....
21-21.9	.74	....	....	....	....	....	....	....	.74	.77	....
22-22.9	.76	....	....	....	....	....	....	....	.76	.79	....
23-23.9	.78	....	$0.78	....	....	....	....	....	.78	.81	....
24-24.9	.80	....	.80	....	....	....	....	....	.80	.83	....
Below 25	....	$0.80	....	....	....	....	....	$0.80	....	....	$0.83
25-25.9	.82	.82	.82	....	$0.82	....	.82	....	.82	.85	.85
26-26.9	.84	.84	.84	....	.84	....	.84	....	.84	.87	.87
27-27.7	.86	.86	.86	....	.86	....	.86	....	.86	.89	.89
28-28.9	.88	.88	.88	$0.91	.88	....	.88	$0.88	.88	.91	.91
29-29.9	.90	.90	.90	.93	.90	....	.90	.90	.90	.93	.93
30-30.9	.92	.92	.92	.95	.92	....	.92	.92	.92	.95	.95
31-31.9	.94	.94	.94	.97	.94	....	.94	.94	.94	.97	.97
32-32.9	.96	.96	.96	.99	.96	....	.96	.96	.96	.99	.99
33-33.9	.98	.98	.98	1.01	.98	....	.98	.98	.98	1.01	1.01
34-34.9	1.00	1.00	1.00	1.03	1.00	$1.03	1.00	1.00	1.00	1.03	1.03
35-35.9	1.02	1.02	1.02	1.05	1.02	1.05	1.02	1.02	1.02	1.05	1.05
36-36.9	1.04	1.04	1.04	1.07	1.04	1.07	1.04	1.04	1.04	1.07	1.07
37-37.9	1.06	1.06	....	1.09	1.06	1.09	....	1.06	....	1.09	1.09
38-38.9	1.08	1.08	....	1.11	1.08	1.11	....	1.08	....	1.11	1.11
39-39.9	1.10	1.10	....	1.13	1.10	1.13	....	1.10	....	1.13	1.13
40 and above	1.12	1.12	....	1.15	1.12	1.15	....	1.12	....	1.15	1.15

NORTH TEXAS, WEST CENTRAL TEXAS, EAST CENTRAL TEXAS GRAVITY TABLES

	1	2	3	4	5	6	7	8
Below 20	....	....	....	....	$.80	....	....	....
20-20.9	....	....	....	....	.82	....	....	....
Below 21	....	....	....	....	....	$.68	....	....
21-21.9	....	....	....	....	.84	.70	....	....
22-22.9	....	....	....	....	.86	.72	....	....
23-23.9	....	....	....	....	.88	.74	....	....
24-24.9	....	....	....	....	.90	.76	....	....
Below 25	....	....	$.88	....	....	....	$0.86	$0.95
25-25.9	$.88	....	.90	$.97	.92	.78	.88	.97
26-26.9	.90	....	.92	.99	....	.80	.90	.99
27-27.9	.92	....	.94	1.01	....	.82	.92	1.01
28-28.9	.94	$.94	.96	1.03	....	.84	.94	1.03
29-29.9	.96	.96	.98	1.05	....	.86	.96	1.05
30-30.9	.98	.98	1.00	1.07	....	.88	.98	1.07
31-31.9	1.00	1.00	1.02	1.09	....	.90	1.00	1.09
32-32.9	1.02	1.02	1.04	1.11	....	.92	1.02	1.11
33-33.9	1.04	1.04	1.06	1.13	....	.94	1.04	1.13
34-34.9	1.06	1.06	1.08	1.15	....	.96	1.06	1.15
35-35.9	1.08	1.08	1.10	1.17	....	.98	1.08	1.17
36-36.9	1.10	1.10	1.12	1.19	....	1.00	1.10	1.19
37-37.9	1.12	1.12	1.14	1.21	....	1.02	1.12	1.21
38-38.9	1.14	1.14	1.16	1.23	....	1.04	1.14	1.23
39-39.9	1.16	1.16	1.18	1.25	....	1.06	1.16	1.25
40 and above	1.18	1.18	1.20	1.27	....	1.08	1.18	1.27

NORTH TEXAS, WEST CENTRAL TEXAS, EAST CENTRAL TEXAS TABLE EXPLANATION

COLUMN (1) WEST CENTRAL AND NORTH:
Humble Oil & Refining Co., 5-21-41, includes Brown, Callahan, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, and Throckmorton counties.
Panhandle Refining Co., 5-21-41, in Leuders area.
Gulf Refining Co., 5-21-41.
COLUMN (2) NORTH TEXAS:
Continental Oil Co., 5-21-41.
Magnolia Petroleum Co., 5-21-41.
Panhandle Refining Co., 5-21-41.
Sinclair Prairie Oil Marketing Co., 5-21-41.
Bell Oil & Gas Co., 5-21-41.
Texas Co., 5-21-41.
COLUMN (3) EAST CENTRAL:
Magnolia Petroleum Co., 5-21-41, includes Cass, Panola, and Rodessa (Texas and Louisiana), and Miller County, Arkansas.
Gulf Refining Co., 5-21-41, includes Rodessa, Texas.
COLUMN (4) EAST CENTRAL:
Humble Oil & Refining Co., 5-21-41, includes Anderson, Cherokee, Limestone, and Navarro counties and the Navarro Crossing field.
COLUMN (5) EAST CENTRAL:
Humble Oil & Refining Co., 5-21-41, includes Hawkins field.
COLUMN (6) NORTH TEXAS:
Stanolind Oil Purchasing Co., 5-21-41.
COLUMN (7) FISHER COUNTY:
Shell Oil Co., Inc., 5-20-41.
COLUMN (8) MEXIA:
Sinclair Prairie Oil Marketing Co., 5-30-41.

STANDARD OIL CO. OF CALIFORNIA

CRUDE-OIL PRICES EFFECTIVE MAY 23, 1941

(All gravities above those quoted take highest price offered in that field)

Gravity	Signal Hill (Long Beach)	Wilmington	(El Segundo)	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley, Canal, Wasco	Coles Levee	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Elwood Terrace
14-14.9	....	$.68	....	....	$.71	....	....	$.70	....	$.70	$.70	$.70	$.72	....	....	....	....	....	$.73	$.73	$.73	....	....	....
15-15.9	....	.71	....	....	.75	$.76	....	.72	....	.72	.71	.72	.72	....	....	....	....	....	.73	.73	.73	....	....	....
16-16.9	....	.74	$.79	....	.79	.79	....	.75	....	.74	.73	.75	.72	....	....	....	....	....	.73	.75	.73	....	....	....
17-17.9	....	.78	.82	....	.82	.82	....	.78	....	.77	.76	.78	.72	....	....	....	....	....	.75	.78	.73	....	....	....
18-18.9	$.80	.82	.86	....	.86	.85	....	.81	....	.80	.79	.82	.74	....	....	....	....	....	.78	.81	.73	....	....	....
19-19.9	.84	.86	.90	....	.89	.88	....	.85	....	.83	.82	.85	.77	....	....	....	....	$.73	.81	.84	.75	....	....	....
20-20.9	.88	.90	.94	....	.93	.92	$.80	.88	....	.86	.85	.89	.80	....	....	....	....	.76	.85	.87	.77	....	....	....
21-21.9	.92	.94	.98	....	.96	.95	.84	.91	....	.89	.89	.92	.84	....	....	....	....	.79	.90	.90	.80	....	....	....
22-22.9	.96	.98	1.02	$.88	.99	.98	.87	.95	....	.93	.93	.96	.87	....	....	....	....	.83	.94	.93	.83	$.76	....	....
23-23.9	1.00	1.02	1.05	.92	1.02	1.01	....	.98	....	.97	.98	1.00	.91	....	....	....	....	.87	.99	.96	.86	.80	....	....
24-24.9	1.03	1.06	1.07	.97	1.05	1.04	f.o.b.	1.01	....	1.01	1.02	1.03	.94	$.99	....	....	....	.90	1.03	.99	.89	.83	....	....
25-25.9	1.07	1.09	1.10	1.01	1.08	1.07	our	1.04	....	1.05	1.06	1.07	.98	1.02	....	....	....	.94	1.07	1.01	.92	....	....	....
26-26.9	1.11	1.12	1.12	1.06	1.11	1.10	pipe	1.08	....	1.09	1.10	1.11	1.01	1.06	....	....	....	.97	1.11	1.04	.95	....	....	....
27-27.9	1.15	1.15	1.15	1.10	1.14	1.14	line	1.11	....	1.13	....	1.15	1.05	1.10	$1.04	....	....	1.01	1.15	1.07	.98	....	....	....
28-28.9	1.18	1.18	1.18	1.15	1.17	1.17	....	1.14	....	1.17	....	....	1.08	1.13	1.08	....	....	1.04	1.19	1.10	1.00	....	....	....
29-29.9	1.20	1.21	....	1.19	1.20	1.20	....	....	$1.17	....	....	....	1.12	1.17	1.12	....	....	1.07	1.24	1.13	1.02	....	....	....
30-30.9	1.23	1.24	....	....	1.23	1.22	....	....	1.21	....	....	....	1.15	1.21	1.15	$1.01	$1.09	1.10	1.28	1.16	1.04	....	....	f.o.b.
31-31.9	....	....	....	....	....	1.24	....	....	1.25	....	....	....	1.19	1.24	1.19	1.04	1.12	1.14	....	....	1.06	....	....	ship
32-32.9	....	....	....	....	....	....	....	....	1.29	....	....	....	1.23	1.28	1.23	1.07	1.14	1.17	....	....	1.09	....	....	....
33-33.9	....	....	....	....	....	....	....	....	1.32	....	....	....	1.27	....	1.26	1.10	1.17	....	....	....	1.11	....	....	$1.22
34-34.9	....	....	....	....	....	....	....	....	1.36	....	....	....	1.31	....	1.30	1.13	1.20	....	....	....	1.13	....	....	1.25
35-35.9	....	....	....	....	....	....	....	....	....	....	....	....	1.35	....	....	1.16	1.22	....	....	....	....	....	$1.23	1.28
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	1.39	....	....	1.19	1.25	....	....	....	....	....	1.26	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	....	1.43	....	....	1.22	....	....	....	....	....	....	1.29	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	....	1.47	....	....	1.25	....	....	....	....	....	....	....	....
39-39.9	....	....	....	....	....	....	....	....	....	....	....	....	1.51	....	....	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	....	....	....	....	....	....	....	....	....	1.53	....	....	....	....	....	....	....	....	....	....	....

Standard posts 73 cents for all grades at Newhall, Kern River, Kern Front, McKittrick and Round Mountain.

Personal Paragraphs

ROLAND GAELLIE, JERRY BLODGETT and HENRY ANDERSON, employes of the Pan American refinery at Texas City, Tex., were injured near Dickinson, Tex., last week when their automobile collided with another machine. Mr. Gaellie suffered a broken kneecap, Mr. Blodgett received two broken legs and Mr. Anderson was severely bruised.

JIM BLUEJACKET, former big-league baseball pitcher who is now head of the welding department of the Standard Oil Co. refinery in Aruba, Netherlands West Indies, is visiting his former home in Mayes County, Oklahoma. He has been in the Dutch West Indies for the past 14 years, and is the oldest employe of the Standard Oil Co. (New Jersey) in point of service there.

DAN HOWARD has been appointed petroleum engineer for the Oklahoma Corporation Commission.

R. P. PHILLIPS, of Jennings, La., formerly with Stanolind Oil & Gas Co., and O. W. Dyer Drilling Co., has formed his own company and is now in the well-servicing business.

JOHN W. CARNES, vice president of Sinclair Refining Co., has returned to New York City after an 8-day flying trip that took him to Florida, New Orleans, Tulsa, Kansas City and Wisconsin.

CLARENDON STREETER, whose injury in an explosion was reported in these columns last week, is showing much improvement at the Bradford, Pa., hospital, where he was taken following the accident.

DAVID DONOGHUE, consulting geologist, will inaugurate the fall meetings of the Fort Worth Geological Society. The subject of Mr. Donoghue's address will be "The Relationship of Initial Production to Ultimate Production of Wells From the Breckenridge in Stephens County."

FAY ANDERSON, of Darby Petroleum Co., Tulsa, was elected the new president of the Petroleum Accountants Society of Oklahoma at the group's first fall meeting last week. J. B. BASS, Continental Oil Co., was elected first vice president; E. W. MUELLER, Shell Oil Co., Inc., second vice president, and L. W. BENNETT, Sunray Oil Co., secretary and treasurer.

J. C. SAMPLE and DON DAWSON, of General Petroleum Corp., have been appointed assistant managers of the marketing department which is headed by A. H. DeFRIEST, who is vice president and director of marketing for the company.

DAVE WOSK, who is doing the geological work on the wildcat which Aztec Oil Co. is drilling in the Newhall region in Los Angeles County, California, is catching up on some sleep after having spent 3 days and nights on the well. Indications point to the possible discovery of a new major field upon completion of the impending test.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

L. L. Marcell and associates have organized the White Eagle Petroleum Co. and have purchased a site for a refinery at Augusta, Kans.

T. Collins McManus, a Tulsa oil operator, died at a hospital in Columbus, Ohio, September 23. He formerly lived at Titusville, Pa.

The supply of tankers is insufficient to carry gasoline necessary to supply the ordinary British demand.

20 YEARS AGO

The Royal Dutch-Shell and the Union Oil Co. of Delaware are negotiating and working out a plan for a merger of all the American holdings of the Royal Dutch-Shell with Union of Delaware.

E. G. Woodruff, head of the land department of the new England Oil & Pipe Line Co., has returned to Tulsa after a 3 months' tour of the west coast of South America.

10 YEARS AGO

Ralph M. Weaver, 34, independent geologist and president of the Falcon Oil Co., Fort Worth, Tex., was killed when his car overturned on the edge of Fort Worth.

Several wells in northeastern Colorado are due for completion the coming week and upon the outcome will depend in a large measure the extent of this fall's drilling activity.

Carl G. Cromwell, San Angelo, Tex., was killed when an automobile he was driving crashed into a concrete bridge near Sheffield, Pa. He was manager and director for the Texon Oil & Land Co. when it opened the Big Lake field in Reagan County, Texas.

Oklahoma led all the states in production of petroleum in August. California, which had been first, dropped to a daily average of 322,419 bbl., while Oklahoma rose to 329,581 bbl. Texas was the third ranking producing state.

R. L. DENHAM, geologist for Humble Oil & Refining Co., and formerly stationed at Midland, Tex., has been transferred to the company's recently opened offices at New Orleans, La. J. B. CARSEY, formerly division geologist for Humble at Midland, is now serving in that capacity at the New Orleans offices, moving from the temporary offices at Lake Charles, La.

JUDGE H. E. BELL, a member of the legal department of Humble Oil & Refining Co., Houston, Tex., retired from active service at age 65 on September 26. He will enter private practice of law in Houston. Mr. Bell was born on a farm near Blanco, Tex., and was educated at the University of Texas. He held public office in Texas for 12 years, and in 1927 he became counsel for Monterey Oil Co., in Abilene, Tex. He joined Humble in 1929 as head of the industrial relations office. After a year he transferred to the legal department and began handling land and title cases. In recent years he specialized in Rule 37, or well spacing, cases before the Texas Railroad Commission.

E. G. TODD, superintendent for Parker Drilling Co., has been moved from Kawkawlin, Mich., to Cleveland, Okla.

BOB HANCOCK, geologist with Magnolia Petroleum Co., Oklahoma City, Okla., has left to serve with the Army. He is a captain in the Quartermaster Reserves.

JOHN H. WATT, land man for Arkansas Fuel Oil Co., at Shreveport, La., has been transferred to the company's offices at Houston, Tex.

R. O. GARRETT, of Arkansas Fuel Oil Co., Shreveport, La., has been appointed chairman of the committee to plan the program for the southwest production district, A.P.I. meeting, at Dallas, Tex., February 26 and 27.

H. K. BEARDMORE, engineer with Amerada Petroleum Corp., addressed the Seminole production chapter of the American Petroleum Institute, at a dinner meeting at which he discussed the use of gas anchors in pumping wells.

K. S. ADAMS, president of Phillips Petroleum Co., flew from New York City to Pampa, Tex., last Friday, to be the principal speaker at a Girl Scout barbecue sponsored by Pampa civic clubs. Mr. Adams spoke on "The Oil Industry's Part in National Defense."

H. C. OTIS, new president of the Dallas Petroleum Engineers Club, succeeding R. H. McLEMORE, Sun Oil Co. engineer, announced the first meeting of the fall series of weekly lectures. Principal speaker at the first meeting will be ALLEN GUIBERSON, vice president of Guiberson Diesel Engine Co.

WILLIAM J. HEALEY, oil producer and head of the Healey Petroleum Corp., Bradford, Pa., has been made general chairman of the Bradford Community Chest.

H. E. PARSONS is in Quito, Ecuador, where he expects to be stationed for the next 3 years as field geologist for Shell Oil Co., Inc. He had been in the United States for several months after returning from Borneo, where he had spent 3 years with Shell.

R. W. McILVAIN, JR., has resumed his position as district manager of Texas for the Pure Oil Co. For the last 10 months Mr. McIlvain has been serving as first lieutenant in 124th Cavalry, Fifty-sixth Brigade. During his absence, C. E. SUTTON, division manager of the Gulf Coast, has served as manager.

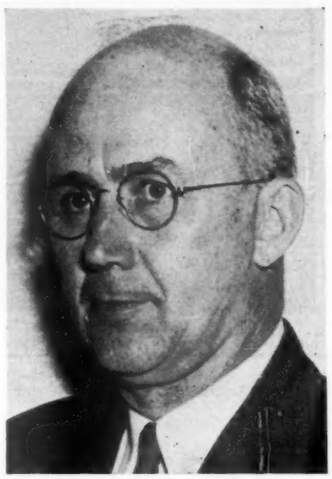
FOSTER MORRELL, who has been deputy supervisor of the Mid-Continent district of the U. S. Geological Survey, left Tulsa last week for Roswell, N. M., to become deputy supervisor of the southwestern district. He spent several days instructing his successor, J. B. MITCHELL, formerly in the northwestern office at Denver, Colo., in the duties of the job.

WALLACE E. PRATT, director; C. H. LIEB, in charge of producing properties, and E. STEBINGER, chief geologist, all of Standard Oil Co. (New Jersey), New York, were visitors in Tulsa last week, where they conferred with officials of Carter Oil Co. Previously they had visited producing offices in Illinois and Louisiana. The officials stopped in Toronto, Canada, before returning to New York.

E. V. WINTERER, chief geologist for Superior Oil Co., has returned from a 2-month trip through South America on which he was accompanied by Mrs. Winterer and the company's assistant chief geologist, EDWARD C. SIMPSON. The party traveled by Pan American Airlines, visiting all oil-producing districts of the provinces of Mendosa, Salta, Jujuy, and Chubut in Argentina, and stopping for more extended visits at Santiago, Buenos Aires, Rio de Janeiro and Lake Maracaibo, Venezuela.

Progressive Operator

A mechanical-engineering education imposed on an oil-field background has proved highly successful in the case of C. C. (Coy) Hogg, vice president of the National Petroleum Co., of Pleasantville, Pa. He is one of the most progressive operators in the Middle district of the Pennsylvania field and one of the best known oil men in the region.



C. C. HOGG

Born September 11, 1891, on the Josllin farm, a noted tract of land in early oil-region annals, not far from Titusville, Mr. Hogg was reared in an oil-region atmosphere. His father, J. H. Hogg, was one of the pioneers and operated in many sections of the Pennsylvania field. Speaking at a Rotary Club meeting recently, on the waste of gas in oil production in the early days, Mr. Hogg said he learned to count when a little tad by numbering the gas flares at wells within sight of his home. There were 47.

The family moved later to the Pittsburgh district and then to Titusville where he attended school. He was graduated from Cornell University in 1914 with a mechanical-engineering degree. He went to Pleasantville in 1919 on a leave of absence due to his father's ill health and remained there since. He became interested in the National Petroleum Co., of which his father was general manager, and later incorporated the firm.

Mr. Hogg is active in civic affairs in Pleasantville. He is president of the school board, an official of the Methodist Church, and is interested in singing. He "made" some of the large-city newspapers in western Pennsylvania recently when his choir attended a moonlight oil-well shooting. The newspapers said the choir "sang" the well in, and illustrated the item with a sketch, but Mr. Hogg insists they merely watched. The night shooting, with pebbles striking bits of metal and causing sparks and pockets of gas igniting, made the sight well worth seeing, he said.

Mr. Hogg has been active for some time in all efforts to improve the Pennsylvania region and is known for his helping hand to other producers. He is a member of the production committee of the eastern district, American Petroleum Institute and the production advisory committee of the Pennsylvania Grade Crude Oil Association.

E. H. PARKER, engineer for Oklahoma Natural Gas Co., Tulsa, addressed members of the Tulsa Engineers Club last week on "Some Fundamentals of Internal-Combustion-Engine Design."

F. E. MINSHALL, engineering assistant to the vice president of Continental Oil Co. at Los Angeles, Calif., left September 23 for his family's home at Saratoga, Calif., after being notified of the sudden death of his father, E. M. Minshall.

JOHN W. LEE has been made California representative of Hunt Oil Co. and has established headquarters in the Beverly-Wilshire Hotel, Beverly Hills. Hunt Oil Co., with H. L. HUNT as president, has become a large independent operator in Texas and Louisiana, and is expected to begin an aggressive campaign toward acquiring California production.

JOHN B. ELLIOTT, OLIVER C. FIELD, V. R. G. WILBUR, FRANKLIN BALDWIN, WALTER H. BUTLER and R. M. KILLINGSWORTH have formed a limited partnership and have subscribed the necessary finances to drill a wildcat 9 miles west of Kerman in the Raisin City area of Fresno County, California. These men are independent California producers.

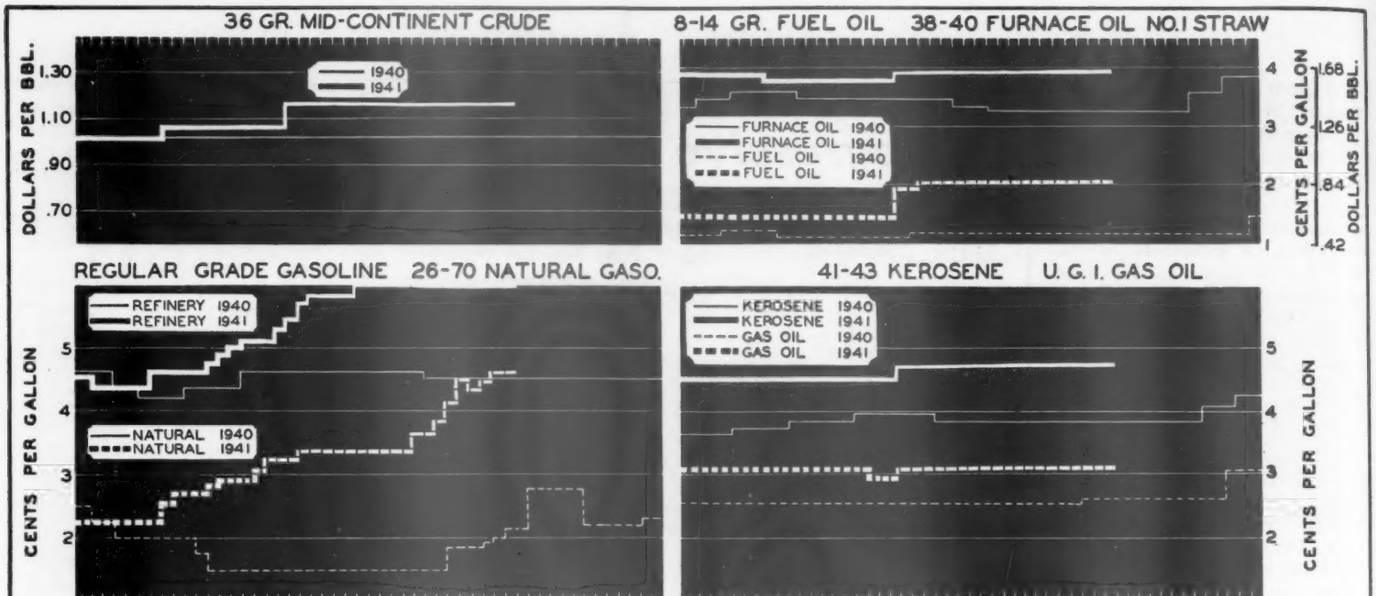
LT. COMDR. W. H. OSGOOD, who has been appointed director of production for District 5, is opening offices in the Subway Terminal Building in Los Angeles, Calif., and will have as assistants WILLIAM F. HUFF, formerly of Petroleum Equipment Co., who will be in charge of equipment priorities, and HARRY L. GARDNER, formerly chief clerk of the Indian Service, Interior Department.

R. E. TURNER, managing director of Superior Oil Co. of New Zealand, Ltd., is leaving his office at Palmerstown North, New Zealand, on October 23, to return to his former home in California for a 3-month vacation. The New Zealand subsidiary of Superior Oil Co. has been engaged in geological and geophysical work for 3 years under Mr. Turner's supervision. He will travel by the New Zealand Clipper by way of Canton Island.

JAMES TANHAM, formerly assistant to the president, was elected vice president of the Texas Co. and the Texas Corp., and TORREY H. WEBB, vice president and general manager of the Texas Co. (California), was elected vice president of the Texas Corp. at a meeting of the board of directors last week. Mr. Tanham, who was born in Brooklyn and educated in New York City, is expected to be in charge of public relations. He entered the employ of the Texas Co. in May, 1919, as a stenographer, after serving as an office boy for a wholesale optical company. He was made assistant to the president in 1933. Mr. Webb, a native of California and a graduate of Columbia University School of Mines in 1917, retains his offices as vice president and manager of the California Co. In 1926 he became an engineer with the California Petroleum Corp. and when that company became the Texas Co. (California) he was made assistant to the vice president. He was elected vice president in 1938.

D. W. MOORE, comptroller of Wilshire Oil Co., has appointed R. G. SNODGRASS, of Superior Oil Co., as chairman of the next monthly meeting of the Los Angeles Petroleum Accountants Society at which R. C. SHIBE, of Wilshire Oil Co., will discuss report of depletion committee.

Shifts: C. C. STEWARD, engineer, Bethel-McCone Parsons Corp., from Whittier, Calif., to Wilmington, Del.; LEO JOHNSTONE, engineer, Phillips Petroleum Co., from Goldsmith, Tex., to Bartlesville, Okla.; BILL STOVALL, engineer, Carter Oil Co., from San Antonio, Tex., to Tulsa; JAMES A. SMITH, engineer, Phillips Petroleum Co., from Vivian, La., to Jefferson, Tex.; W. H. GEIS, superintendent, Union Oil Co. of California, from San Marino, Calif., to Washington, D. C.; W. E. MORRISON, superintendent, Sinclair Refining Co. pipe-line department, from Tulsa to National Defense Pipe Lines, Inc., Norristown Pa.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Buyers Comb Mid-Continent Refinery Market for Full Range of Products

By H. STANLEY NORMAN

EAGERNESS of major buyers to increase their receipts of practically all petroleum products available at Mid-Continent refineries and the scarcity of supplies this week maintained prices for all materials at the peaks of current ranges.

Cooler weather in the northern states and the tank-car shipment of larger quantities of oil from the Middle West to the East Coast stimulated inquiry for distillate fuel oils. Practically all Mid-Continent manufacturers of light burning oils are showing complete disinterest in current efforts to purchase fuels in this classification. The conviction is deep among refiners that prices for light fuel oils will move higher just as soon as cooler weather has prevailed long enough to exhaust stocks in consumer tanks. Most all Group 3 refiners have placed substantial volumes of kerosene and other distillate fuel oils in storage during the past summer, probably to an extent without precedent because of a higher rate of refinery operations. Still, they are completely willing to ignore inquiries at present prices.

Tank-Wagon Prices Stir

Tank-wagon prices for light fuels have stirred slightly in the Chicago district but this upward movement has not been sufficient so far to react on the tank-car market.

Natural gasoline continues as one of the least available products in the Mid-Continent district. Sales were reported this week at 4.75 cents per gallon which is 0.125 cent per gallon higher than the previous week's high. Other scattered sales were reported closed at the previous week's figures but heavy orders from this segment of the market were rapidly exhausting supplies at midweek. Shipments have been heavier in the past 3 or 4 weeks than at any time in the history of the natural-gasoline industry, according to reports from representative manufacturers.

Refined Oil Market Barometer

Refinery markets throughout the eastern two-thirds of the United States are growing stronger. Basic markets on the Gulf Coast have responded to heavier purchases and a reduction in supplies. Eastern, middle western and southern markets for crude and all refined products are firm to stronger with indications that still higher prices may develop in the near future on the less abundant materials.

MID-CONTINENT: Natural-gasoline sales at 0.125 cent above previous prices were reported this week.

GULF COAST: Top price range of all grades of refinery gasoline advanced 0.125 cent per gallon.

CALIFORNIA: Diesel fuels display particular weakness under pressure of higher stocks.

PENNSYLVANIA: Cylinder oils selling at higher prices. All products in strong demand.

CHICAGO: Inquiries for distillate fuel oils growing stronger. Gasoline trading active.

Texas manufacturers are moving natural gasoline to the Gulf Coast in large volumes, indicating a movement in the market that correlates with reports from Houston, Tex., where cargo sales have been particularly heavy in recent weeks. The higher prices quoted at Houston and other Gulf Coast refining centers are partly a reflection of the increased market for natural gasoline which is being blended more liberally at this season to meet winter volatility requirements.

Much interest is currently focused on outcome of the effort by Pennsylvania producers to secure removal of the crude-price ceiling imposed on certain types of eastern oil by Leon Henderson, price administrator. Producers and refiners, alike, in the Mid-Continent and other areas where crude conditions are tight, recognize the Pennsylvania situation as one that may indicate the outlook for other oil markets.

Report of the District 1 transportation committee, disclosed last week by Petroleum Coordinator Ickes, indicates that eastern movement of Mid-Continent crude and products by railroads is definitely limited by lack of tank cars. The committee found 5,192 idle tank cars as of September 7, instead of the 20,000 that J. J. Pelley, president of the American Association of Railroads, had reported 2 weeks earlier to the Senate committee investigating the East Coast petroleum shortage.

Transportation Vital Factor

Availability of tank cars will have a distinct influence on the Mid-Continent petroleum markets for the next several months, perhaps for the indefinite future. If transportation facilities are unavailable for further substantial increases in the eastern movement of petroleum by railroads, Mid-Continent refiners may not receive the draft on their products that was previously indicated.

Gasoline demand and prices are firm. Refiners reported this week that a slight lull in orders apparent immediately after Labor Day was only temporary and that buyers are again actively searching for material. Major companies are willing to increase their purchases by substantial amounts but the material is just not obtainable. Interrefinery transactions have settled into a routine that permits no deviation from customary deliveries. Refiners who normally purchase part of their requirements from smaller manufacturers declare that it is impossible to increase this phase of their business and that they would not know where to start searching for additional supplies.

Residual Fuel, Lubes and Wax Hold Firm East Coast Position

By J. P. O'DONNELL

NEW YORK, Sept. 30.—An exceptionally tight condition characterizes the East Coast market for residual fuel oil, lubricating oil and wax, while gasoline and distillates are somewhat easier. Price ceilings prevent upward revisions of quotations on the first two products while the last two are sustained by prospective supply and demand conditions which are expected to become increasingly tight as over-all demand reaches peak proportions in the last part of the year.

Lubricating oils, particularly, are in the tightest position in years. This condition is shown in the latest report of the National Petroleum Association on stocks of Pennsylvania oils. This report shows that stocks of viscous neutrals at refineries on August 31 amounted to only 110,484 bbl. or approximately half the total in storage 6 months earlier. The level of neutral inventories is the lowest in the 5-year period for which statistics have been published.

Bright-stock inventories at the end of August were at the lowest point in almost 2 years. Pennsylvania bright-stock prices, however, have not improved accordingly and 25-pour material is still reported available at from 25 to 28 cents per gallon. Acting against further bright-stock improvement is the fairly well sustained inventory position of 600 steam-refined stock, the raw material for bright stock.

Both Pennsylvania refiners and producers feel that the critical stock position will not be relieved until crude-oil production is increased and that production of Pennsylvania crude will not increase until better prices are allowed by the OPA. Figures on costs and the affect of price on production were presented to the OPA last Friday in the hope of having the present ceiling removed and, if recent price advances are restored, it is predicted that drilling in the Bradford field will advance to a rate exceeding that of 1937 when more than 4,000 wells were drilled. While this will not effect an immediate increase in production it will ease the long-term outlook for Pennsylvania lubricating oils which is now decidedly unpromising so far as meeting the additional demands of national defense is concerned.

The inventory position of residual fuel oil on the East Coast likewise continues dangerously low. A slight draft on stocks was reported in the third week of September at the end of which stocks were approximately 2,300,000 bbl., about 20 per cent, lower than at the corresponding period of last year. The tight position of No. 6 fuel oil has not been reflected in prices since practically all is sold on contract though some spot transactions have been made at prices well above those specified in existing contracts. The ability to meet the demand for heavy fuel oil in the latter part of the year still remains the principal problem in the East Coast supply situation.

The decline in residual fuel oil and other refined-product inventories was offset by the increase of 156,000 bbl. in gasoline stocks and 1,227,000 bbl. in heating-oil inventories. Recent increases in heating-oil stocks have brought them close to last year's level but while this has been very encouraging, suppliers continue to express concern over the possibility of maintaining supplies in the last quarter of this year and the first of next when over-all refined-products demand reaches its peak in this area.

The over-all statistical position of the East Coast was considerably improved in the third week of September. The U. S. Bureau of Mines reports an increase in both crude and refined-oil stocks of 2,052,000 bbl. on the Atlantic Coast in that week, 1,068,000 bbl. in crude-oil stocks and 984,000 bbl. in refined-products stocks. However, with the heavy motoring season completed and the heavy fuel-oil consuming season yet to start, this is a period of unusually low demand and results attained in this short period cannot be regarded as a definite indication of the future.

New York completed its study of the East Coast shortage last week and on Thursday, Grover A. Whalen submitted a 65-page report to Mayor LaGuardia declaring that there is "a real and serious" shortage of gasoline and fuel oil on the eastern seaboard and stating that "the situation is admitted to be serious enough to make conservation measures imperative." The report supported the stand of the industry and Office of Petroleum Coordinator in seeking to conserve supplies and refuted that of the Senate investigation committee which found that there is no shortage.

Metropolitan area marketers, both wholesale and retail, supported the conclusions of the Whalen report and announced that they would comply with its recommendations. These recommendations, in brief, were: (1) Conducting a radio, press and movie campaign urging oil conservation in both motoring and home heating; (2) reduction of parking congestion; (3) establishment of more taxicab stands to reduce cruising; (4) testing stations to determine car efficiencies; (5) elinimation of special deliveries; (6) changing the base allocation month from July 1941, to a basis giving consideration to seasonal fluctuations in demand; (7) stop service-station building; (8) continuation of the 12-hour curfew; (9) issuance of insignia to those cooperating in conservation efforts; (10) discourage the conservation of heating plants from coal to oil.

Gulf Refinery Prices Move Higher as Demand Rises

HOUSTON, Tex., Sept. 29.—Gulf Coast refinery markets continue to strengthen under the pressure of steady demand and reduced supplies. This is reflected in fractional advances in quotations and going prices of gasoline, kerosene and gas oil. Heavy fuels remain firm. General boosts are expected shortly in quotations on lubricating-oil stocks. The scarcity of gasoline is becoming increasingly acute. Some sources are completely sold up until late in December, while others will have nothing to offer until November. Only a few have any material, and this is available only in limited volume. Gasoline of 80 octane (research) or better was sold during the week at 6.625 cents, with some moving at 6.75 cents. Several sellers asked up to 7 cents, which is 0.5 cent over the new advanced "ceiling" of 6.5 cents. Shortage of material prevented any large sales. Several sources are hesitant to quote even for future delivery.

Additional lend-lease buying of kerosene was reported during the week. One order was placed on a bid of $1.73 per barrel, or on the basis of more than 4 cents per gallon. Another was placed on a bid of $1.65 per barrel or just under 4 cents per gallon. In line with these prices, quotations generally are being advanced to 4 cents for this material.

Gas oil (No. 2 fuel oil) also is being quoted at 4 cents in some cases with trading actually being done on that basis. This product also is enjoying lend-lease demand. The only

(Continued on next page)

A.P.I. Weekly Refinery Statistics

Week Ended September 27, 1941

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	18,872,000	10,155,000	18,364,000	616,000
Appalachian	83.6	3,261,000	523,000	637,000	135,000
Ind., Ill., and Ky.	84.4	14,452,000	4,504,000	5,736,000	654,000
Okla., Kans., and Mo.	80.7	6,847,000	2,015,000	2,187,000	315,000
Inland Texas	63.2	2,200,000	1,339,000	504,000	147,000
Texas Gulf	91.0	12,080,000	8,376,000	6,327,000	922,000
Louisiana Gulf	89.1	2,804,000	2,125,000	1,611,000	174,000
N. Louisiana and Ark.	49.9	417,000	417,000	388,000	58,000
Rocky Mountains	50.1	1,005,000	397,000	131,000	65,000
California	90.9	13,665,000	63,975,000	12,935,000	541,000
Total reported	86.3	75,603,000	93,826,000	48,820,000	3,627,000
Est. unreported	.....	5,400,000	1,425,000	1,130,000	353,000
*Est. total	.....	†81,003,000	95,251,000	49,950,000	3,980,000
*Est. total previous wk.	.....	80,199,000	95,005,000	48,907,000	3,995,000
*Sept. 28, 1940	.....	82,146,000	107,470,000	48,323,000	3,600,000

*Bureau of Mines. †Includes 7,396,000 bbl. aviation gasoline.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ended September 20, 1941	246,500,000 barrels
Week ended September 13, 1941	246,164,000 barrels
Week ended September 21, 1940	262,209,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

RETAIL OIL MARKETS...

Tank-wagon and filling-station prices on gasoline and kerosene furnished by larger marketing firms

Prices as of September 30, 1941

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank wag.
Chicago, Ill.	16.1	14.1	4.5	10.3
Decatur	15.4	13.4	4.5	9.5
Joliet	16.4	14.1	4.5	10.3
Peoria	16.2	13.7	4.5	10.1
Quincy	13.4	12.4	4.5	10.0
Davenport, Ia.	16.2	14.7	4.5	10.1
Des Moines	15.9	11.9	4.5	9.8
Mason City	16.2	14.7	4.5	10.1
Duluth, Minn.	17.7	16.2	5.5	10.6
Mankato	17.4	15.9	5.5	10.3
Minneapolis	17.4	15.9	5.5	10.3
La Crosse, Wis.	17.4	15.9	5.5	10.3
Green Bay	17.7	16.2	5.5	10.6
Milwaukee	17.6	16.1	5.5	10.5
Detroit, Mich.	15.9	14.4	4.5	9.6
Grand Rapids	15.9	14.4	4.5	9.6
Saginaw	15.9	14.4	4.5	9.6
Evansville, Ind.	16.9	15.4	5.5	9.6
Indianapolis	17.1	15.2	5.5	9.8
South Bend	17.5	16.0	5.5	10.2
Fargo, N. D.	18.4	16.9	5.5	11.3
Huron, S. D.	17.8	16.3	5.5	10.7
Kansas City, Mo.*	14.9	13.4	4.5	9.4
St. Louis*	14.8	13.3	4.5	9.8
St. Joseph	15.7	14.2	4.5	9.6
Wichita, Kans.	14.8	12.7	4.5	8.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers. On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off, minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Sept. 18, 1941, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 9.0 cents; 100-149 gal., 8.0 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.5 cents; 400 gal. and over, 7.0 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.5 cents; 400 gal. and over 7.0 cents. Stanolex fuel oil A, 1-99 gal. 8.0 cents; 100-399 gal., 7.0 cents; 400-749 gal., 6.0 cents, 750 gal. and over, 5.25 cents. Stanolex fuel oil B, 1-99 gal., 8.0 cents; 100-399 gal., 7.0 cents; 400-749 gal., 6.0 cents; 750 gal. and over 5.25 cents. Stanolex Bunker C fuel oil, 1-399 gal., 6.5 cents; 400-999 gal., 5.5 cents; 1,000 gal and over, 4.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Cons'r tank wag.	Gasoline Dl-vided dlr.	Gasoline Inc. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r tank wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank wag.
Atlanta, Ga.	18.00	18.00	7.5	10.0
Augusta	18.00	18.00	7.5	9.5
Macon	18.00	18.00	7.5	10.0
Savannah	17.00	17.00	7.5	9.0
Birmingham	18.50	18.50	8.5	8.0
Mobile	18.50	18.50	9.5	8.5
Montgomery	19.50	19.50	9.5	10.0
Jackson, Miss.	17.50	17.50	7.5	9.0
Vicksburg	17.00	17.00	7.5	8.5
Jacksonville, Fla.	18.00	18.00	8.5	8.0
Miami	18.00	18.00	8.5	8.0
Pensacola	18.50	18.50	9.5	8.0
Tampa	18.00	18.00	8.5	8.0
Lexington, Ky.	17.00	17.00	6.5	9.0
Covington	16.0	16.0	6.5	9.0
Louisville	16.50	16.50	6.5	8.5
Paducah	16.50	16.50	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons'r tank car	Gasoline Dlr. tank wag.	Gasoline Inc. tax	Kero. tank wag.
Atlantic City	13.0	14.0	4.5	7.9
Newark	13.0	14.0	4.5	7.9
Annapolis	13.85	15.35	5.5	9.7
Baltimore	13.25	14.75	5.5	8.7
Cumberland	14.65	16.15	5.5	10.2
Washington, D. C.	11.50	13.00	3.5	9.2
Danville, Va.	15.45	17.45	6.5	10.45
Norfolk	14.25	16.25	6.5	10.2
Petersburg	14.55	16.55	6.5	11.2
Richmond	14.55	16.55	6.5	11.2
Roanoke	15.75	17.75	6.5	10.7
Charles'n, W. Va.	15.55	18.05	6.5	11.5
Parkersburg	14.85	17.35	6.5	11.2
Wheeling	15.25	17.35	6.5	11.8
Charlotte, N. C.	17.40	18.90	7.5	9.5
Hickory	17.95	19.45	7.5	10.5
Mount Airy	17.80	19.30	7.0	9.7
Raleigh	17.15	18.65	7.0	10.5
Salisbury	17.45	18.95	7.5	10.9
Charleston, S. C.	15.25	17.75	7.5	(*)
Columbia	16.10	18.60	7.5	(*)
Spartanburg	16.80	19.30	7.5	(*)

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connections, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery: 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

*Kerosene business of the company at these points now exclusively handled by dealers.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline Cons'r tank car	Gasoline Dlr. tank wag.	Gasoline Inc. tax	Kero. tank wag.
Philadelphia, Pa.	14.0	15.0	5.5	10.15
Pittsburgh	14.5	15.5	5.5	10.5
Allentown	14.5	15.5	5.5	10.5
Erie	14.5	15.5	5.5	10.5
Scranton	14.5	15.5	5.5	10.5
Altoona	14.5	15.5	5.5	10.5
Dover, Del.	...	15.5	5.5	10.5
Wilmington	...	15.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank truck	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
San Francisco	17.5	18.5	4.5	11.5
Los Angeles	17.0	18.0	4.5	10.0
Fresno, Calif.	18.5	19.5	4.5	12.5
Phoenix, Ariz.	21.5	22.5	6.5	12.5
Reno, Nev.	20.5	21.5	5.5	13.5
Portland, Ore.	20.0	21.0	6.5	13.5
Seattle, Wash.	20.0	21.0	6.5	13.5
Spokane	22.0	23.0	6.5	16.5
Tacoma	20.0	21.0	6.5	13.5

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Comm. tank wag.	Gasoline Dlr.* tank wag.	Gasoline Inc. tax	Kero. tank wag.
Albany	14.2	14.7	5.5	7.7
Met. New York	14.4	14.9	5.5	8.0
Buffalo	14.5	15.0	5.5	8.3
Rochester	15.1	15.6	5.5	8.8
Syracuse	14.8	15.3	5.5	8.7
Portland, Me.	14.6	15.1	5.5	8.1
Manchester, N. H.	15.6	16.1	5.5	9.0
Burlington, Vt.	15.2	15.7	5.5	8.3
Boston, Mass	13.2	13.7	4.5	8.0
Worcester	13.8	14.3	4.5	8.1
Hartford, Conn.	13.9	14.4	4.5	7.6
New Haven	13.3	13.8	4.5	6.9
Providence, R. I.	13.3	13.8	4.5	7.8

*Undivided.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Inc. tax	Kero. tank wag.
Denver, Colo	14.5	5.5	11.0
Grand Junction	18.0	5.5	12.5
Pueblo	14.5	5.5	9.5
Casper, Wyo.	17.0	5.5	12.0
Cheyenne	16.0	5.5	11.5
Billings, Mont.	18.0	6.5	12.5
Butte	17.0	6.5	13.5
Great Falls	17.0	6.5	12.5
Helena	17.0	6.5	13.0
Salt Lake, Utah	18.5	6.5	14.5
Boise, Idaho	†20.1	6.5	16.5
Twin Falls	†21.1	6.5	17.0
Albuquerque, N. M.	*17.5	7.0	10.0
Roswell	*15.5	7.0	8.5
Santa Fe	‡18.0	7.5	10.0

*Includes city tax of 0.5 cent. †Includes toll-bridge tax of 1 mill. ‡Includes city tax of 1 cent.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Texarkana, Ark.	14.0	5.5	6.0
Fort Smith	15.5	7.0	6.5
Little Rock	17.25	8.0	8.0
Muskogee, Okla.	15.0	7.0	8.0
Oklahoma City	15.0	7.0	8.0
Tulsa	15.0	7.0	8.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons'r tank car	Gasoline Dlr. tank wag.	Gasoline Incl. tax	Kero. tank wag.
New Orleans, La.	15.25	17.50	8.5	‡10.0
Baton Rouge	15.25	17.50	8.5	‡10.5
Alexandria	15.25	17.50	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.50	18.00	8.5	‡10.0
Shreveport	15.0	17.0	8.5	9.0
Knoxville, Tenn.	18.00	20.50	8.5	12.5
Memphis	16.25	18.75	8.5	10.5
Chattanooga	17.50	19.5	8.5	11.0
Nashville	17.75	19.5	8.5	10.0
Bristol	18.25	18.75	8.5	12.0

Esso at dealer price less 0.5 cent per gallon to undivided dealers.

‡Includes 1-cent state tax.

Price basis to commercial consumers throughout Louisiana, Arkansas, and Tennessee: On single deliveries of 50 gal. or more at a time—posted consumer tank-wagon price. On single deliveries of less than 50 gal. at a time—posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price is the same as the posted dealer tank-wagon price, less 0.5 cent per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Incl. tax	Kero. tank wag.
Omaha	17.9	15.4	6.5	9.8
McCook	18.5	15.9	6.5	9.5
Norfolk	18.4	16.9	6.5	10.3
North Platte	18.8	16.4	6.5	10.7
Scottsbluff	18.9	16.0	6.5	10.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Incl. tax	Kero. tank wag.
Dallas, Tex.	14.0	17.0	5.5	7.0
Fort Worth	14.0	17.0	5.5	7.0
Houston	14.0	18.0	5.5	8.0
San Antonio	14.0	18.0	5.5	7.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline

IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Halifax, N. S.	28.5	13.0	19.0
St. John, N. B.	28.5	13.0	19.0
Montreal, Que.	27.0	11.0	17.5
Toronto, Ont.	27.5	11.0	18.0
Hamilton, Ont.	27.5	11.0	18.0
Winnipeg, Man.	30.5	10.0	22.5
Brandon, Man.	31.0	10.0	23.0
Regina, Sask.	28.0	10.0	20.0
Saskatoon, Sask.	30.8	10.0	22.8
Edmonton, Alta.	28.9	10.0	20.9
Calgary, Alta.	26.0	10.0	18.0
Vancouver, B. C.	25.0	10.0	24.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In Maritime Provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Atlantic Refining Co. advanced the kerosene tank-wagon price 0.5 cent per gallon at Erie, Pa., effective September 17.

Standard Oil Co. of Indiana reduced the dealer tank-wagon price of gasoline 1 cent per gallon at Peoria, Ill., effective September 17.

Gulf Coast Markets

(Continued from Preceding Page)

question in these prices is the fact that several sources have fairly heavy supplies. However, these sources so far are not pushing sales at concession prices, and with increasing demand the prospects are that these supplies will be eliminated.

Diesel index oils are strengthening accordingly, with quotations advanced.

Heavy fuels, particularly Bunker C, are puzzling observers in that prices show no upward trend despite steady buying and limited supplies. Quotations, however, continue firm at 85 cents per barrel for material in cargo lots.

PRICES OF REFINED PRODUCTS...

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of September 30, 1941
(Most prices in cents per gallon)

The quotations are exclusice of the federal excise taxes of 1.5 cents a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055
60-62 400 grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06125
63-66 octane	.0550	.06
60 octane and below	.05125	.05375
60-62 400	.05	.06

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06125
63-66 octane	.0550	.05875
60 octane and below	.05	.06

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06125
60 octane and below	.05	.05375

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055
60-62 400 grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)	.0750	.0775
80 octane (1939 Research)		.0800

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.065	.0725
54-58 U. S. Motor	.0575	.0625

EAST COAST (domestic)—

U. S. Motor (minimum 72 octane):		
New York (Bayonne)*	.08	.085
Philadelphia	.08	.0825
Boston	.085	.09
Baltimore	.08	.0825
Charleston, S. C.	.0725	.0775

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
80 (research)	.06625	.0675
72-74 octane (leaded)	.06375	.0650
70-72 octane (unleaded)	.06375	.06625
68-70 octane (unleaded)	.0625	.0650

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.04625	.0475
Grade 18-55		.055

NORTH TEXAS—

Grade 26-70		.04375
Grade 18-55		.0525

CALIFORNIA—

75-85 375-390	.045	.05

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.04125

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p. 110-flash, 540-550 e.p.	.0375	.03875
41-43 gr., 300-320 i.b.p. 110-125 flash, 500-520 e.p.	.03875	.04
46-48 gr., 210-230 i.b.p. 480 max., e.p.	.04125	.0425

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.0450	.0475
41-43	.04375	.04625

NORTH TEXAS—

41-43	.0425	.04625

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04375	.04625

ARKANSAS (Ark. and N. La. del.)—

41-43	.04375	.04625

PENNSYLVANIA (inland refineries)—

46	.06125	.06625
45	.06	.065

CHICAGO (Based on Group 3)—

42-44	.0450	.0475
41-43	.04375	.04625

CALIFORNIA (Pac. Coast market)—

38-40 high-burning test	.045	.055

NEW YORK (Bayonne, N. J.)—

41-43		.055

GULF COAST (domestic)*—

41-43	.03875	.04

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.04	.0425
No. 1 white (38-42)	.03875	.04125
No. 2 straw (32-36)	.0350	.0375
No. 3 zero to 10 (28-32)	.03375	.03625

NORTH TEXAS—

No. 1 white (38-42)	.03825	.04125

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2 (32-36)	.0325	.035

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.0325	.035

CHICAGO (Based on Group 3)—

Range oil	.04	.0425
No. 1 white (38-42)	.03875	.04125
No. 2 straw (32-36)	.035	.03625
No. 3 zero to 15 (28-32)	.03375	.035

NEW YORK (Bayonne, N. J.)—

*No. 1		.055
*No. 2	.051	.0525
*No. 3	.051	.0525

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

No. 5, low pour point (18-22)	.85	.90
No. 6, 15 and above (10-16)	.85	.90

NORTH TEXAS—

No. 5, low pour point (18-22)	.80	.85
No. 6, 15 and above (10-16)	.80	.85

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

No. 5, low pour point (18-22)	.85	.90
No. 5, 15 and above (18-22)	.85	.90
No. 6, low pour point (10-16)	.85	.90
No. 6, 15 and above (10-16)	.85	.90

PENNSYLVANIA (inland refineries)—

36-40	.05875	.0625

CALIFORNIA—

Los Angeles:

30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.75	.85
10-16 (cargo lots)	.75	.85
12-17 (tank cars)	.65	.75
10-17 (high sulfur)	.55	.65
San Joaquin Valley:		
10-18 (tank cars)	.70	.85
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.0375	.04
43-47 diesel		.04
48-52 diesel	.04	.04125
53-57 diesel	.04	.04125
58-and-above diesel	.04125	.0425
Diesel bunkers		1.45
Bunker C (bulk cargoes)	.85	.90
Bunker C (bunkers)		.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.050
28-30 diesel (lighterage 6¼c per bbl.)		2.15
28-30 diesel (tank cars)		.05
Bunker C (to ocean-going ships in N. Y. Harbor)	1.35	1.45
Industrial fuel (tank cars)		.044

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.27
150-160 D, 0-10		.23
150-160 D, 10-25		.225
120-125 D, 0-10		.225
120-125 D, 10-25		.22
Steam refined:		
600 dark green (untreated)		.145

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.305
15 pour point		.295
25 pour point	.25	.28
Steam refined:		
600	.15	.16
650	.155	.165
600 flash	.16	.17
630 flash	.16	.175

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.145
180-3		.15
200-3		.15
250-3		.165
280-3		.175
280-4		.17
300-3		.185
350-3½		.19
400-3½		.20
500-3½		.205
600-3½		.21
100-2½ paraffin oil 10-25		.0825
10-25 pour point:		
200-3		.145
250-3		.16
280-3		.17
280-4		.165

CALIFORNIA (moving to dom. mkt.)—

Pale oils:		
200-2½-3	.07	.0775
300-2½-3	.07	.0775
400-3-4	.0725	.08
450-3-4	.0725	.08
550-3-4	.0875	.1075
600-3-4	.0875	.11
Red oils:		
200-4-5	.07	.0775
300-5-6	.0725	.08
350-5-6	.09	.11
400-5-6	.09	.11
450-5-6	.09	.1125
500-5-6	.0925	.1125
600-5-6½	.0925	.1125
700-6½ plus	.0925	.1125
750-6½ plus	.0925	.1125
900-6½ plus	.0925	.1125

GULF COAST—

Pale oils:		
100-3	.0625	.0650
200-3	.0850	.0875
300-3	.09	.0925
500-3½	.0975	.10
750-3½	.10	.1025
1,200-3½	.1025	.10375
2,000-4	.1050	.1075
3,000-4	.1225	.1250

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.385
10 pour point		.375
15 pour point		.365
25 pour point	.31	.35
200 vis., at 70° F., 3 color:		
Zero pour point		.405
10 pour point		.395
15 pour point		.385
25 pour point	.33	.37

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.0575	.06

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale		.06
124-126 (A.m.p.) w.c. scale		.06

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax	.0560	.0640
128-130 (A.m.p.) wax	.0560	.0660
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.		.06
124-126 (A.m.p.) y.s.		.06
Petrolatum in barrels, carload lots:		
Dark green		.02875
Amber	.02875	.03125
Extra amber	.03125	.03375
Lily white	.04875	.05375
Snow white	.05625	.05750
Cream	.04125	.05250

Export Prices

GASOLINE

GULF COAST—

60-62 400	.0550	.0675
61-63 390	.0575	.0650
64-66 375	.0575	.0650

LOS ANGELES—

U. S. Motor grades:		
Above 60 octane	.06	.0625
65-69 octane	.0575	.06
60-65 octane	.0525	.055

KEROSENE

GULF COAST—

41-43 water white	.0375	.04

LOS ANGELES—

41-43 water white	.05	.0525

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered		.23
630 S.R. unfiltered		.235
600 flash, S.R.		.24
650 flash, S.R.		.25
Bright stock:		
Light, 25 pour point	.34	.35

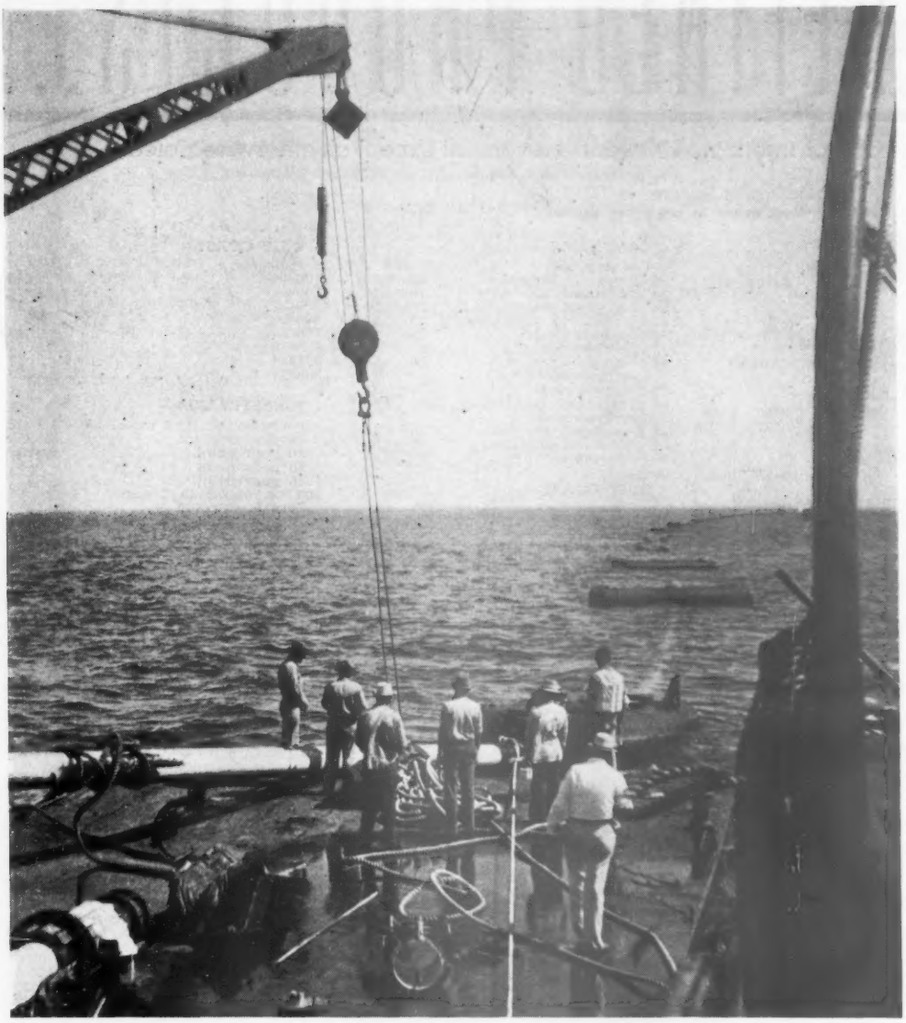
NEUTRAL OIL

200-3 color	.43	.50
150-3 color	.41	.46

PARAFFIN WAX

NEW YORK (prices per bbl.)—

123-125 A.m.p.	.0560	.0625
125-127 A.m.p.	.0560	.0625
128-130 A.m.p.	.0585	.0650
133-135 A.m.p.	.0615	.0700
135-137 A.m.p.	.0640	.0700
Crude scale:		
124-126 w.s.		.06
124-126 y.s.		.06



One of the half-mile sections of pipe which has been tugged out to the derrick barge on Lake Pontchartrain. The welding clamp and the other end of the pipe line may be seen at the lower left. The barely visible white line between the first and second pontoons is the pipe slung beneath the pontoons and just under the surface of the water

Rapid Progress Being Made on Longest Marine Pipe Line

(Continued from Page 18)

chemicals emitted by the marine-plant growth of the lake bottom.

To insure minimum damage to this somastic coating while being laid into the line, all tools, clamps, and derrick equipment are padded at the points of contact with the pipe. Each weld made on the shore while constructing the long lengths of pipe has a patch of somastic over it, and likewise, each of the connecting welds made at the barges is patched with the somastic coating.

In order that the line will have true direction across the lake the entire 24½ miles is well marked with buoys. The direction of the wind and the surface current has a great deal to do with the towing of the sections of pipe out to the work barges. Usually they are started upwind sufficiently so that, allowing for some drift, they will arrive at the point of the work barges in the middle of the lake. To insure permanent location, anchors are set in the lake bottom and the tug boats move the barges from anchor to anchor as the work progresses.

At the start of the lake-crossing procedure the two derrick barges were in the approximate middle and now are working toward opposite shores, the barges being some 4 miles apart at present.

When high wind or storm threatens on the lake the pipe-lining work is suspended until more favorable conditions prevail. When halting work each of the two ends of the main section of pipe in the lake is buoyed up, anchored securely and left in place. If sudden storms threaten the ends of the pipe are sometimes merely plugged, a buoy tied to the end, and thrown overboard to the lake bottom. The latter method makes grappling for the ends necessary when work is to be resumed and for this reason is usually avoided. With the water only 16 ft. in depth working conditions are not too difficult and there is always sufficient weight of the pipe itself to hold it down on bottom.

Pipe Handling on the Barges

The several-hundred-foot sections of pipe, after being towed out to the middle of the lake, are laid down on the working barges with one end resting in the welding clamp. Two welders work on the joint and as a completed section of pipe is welded, it is lowered into the lake by means of the derrick on the barge. Each time a section is lowered, enough line is slacked off from the barge to allow the proper amount of pipe to rest on the lake bottom and also to insure its coming up to the work barge at the proper angle to fit into the clamp for welding. A stringer and three beads are run on each section welded.

Heavy river clamps weighing 1,000 lb. each were bolted to the pipe every 20 ft. on the Mississippi River crossing. However, the strong current encountered in the river is not present in the lake. The 14-in. pipe being laid across the lake weighs 72.09 lb. per foot and with the heavy somastic coating averaging 25 lb. per linear foot, the pipe as it is ready for laying weighs 97.09 lb. per foot. This weight is sufficient to overcome any tendency toward buoyancy in the completed line and also to insure its staying in place on the bed of the lake.

Transportation to and from the barges and the shore of the lake is furnished by the tugboat or the various crew boats. For verbal communication there is a ship-to-shore telephone on the barge.

Inventory engineers are kept on the barges during the entire job as the record of the materials used has to be taken before the line is lowered to the lake bottom.

The crossing is being engineered by United Gas Pipe Line Co. and is under the direct supervision of Earl V. Hamilton, Jr., of that company. Construction engineers are Brown & Root, general contractors for the job.

●

Sinclair Refining Co. Launches New Tanker

QUINCY, R. I., Sept. 27.—In cooperation with the plans of Admiral Emory S. Land of the U. S. Maritime Commission for Liberty Fleet Day, the Sinclair Refining Co. launched today at the Fore River plant of the Bethlehem Steel Corp. its new tanker, S.S. Sinclair Superflame. The vessel was christened by Mrs. Harry A. Hassan.

The vessel, which was designed by the Sinclair Refining Co. marine department, represents a distinctive and highly developed type single deck with poop, bridge and forecastle, and the twin longitudinal bulkhead type of bulk-oil carrier, with propelling machinery located at the after end. The first American tanker of this type was the S.S. Virginia Sinclair, launched by Sinclair here on October 9, 1930.

The 4,000-hp. driving machinery calls for a speed on trial of 14 knots. Special attention has been paid to fireproofing and the type of quipment installed.

Careful consideration has been given the comfort of the crew. Each stateroom has hot and cold water and every two staterooms a private bath. Recreation rooms, with radio in each room, are provided, as well as mess rooms and laundry.

The vessel has an over-all length of 471 ft. 9 in.; 63 ft. 6 in. breadth; 34 ft. 6 in. depth with a carrying capacity of approximately 95,000 bbl. of products in its cargo tanks, and over 27,000 cu. ft. of dry cargo carrying capacity. Its tonnage is 12,169 deadweight.

W. C. Krog Elected Head Of North Texas A.P.I. Group

WICHITA FALLS, Tex. — At the opening fall meeting of the North Texas chapter of the A.P.I., Division of Production, held here recently, W. C. Krog, of King Oil Co., was elected chairman. Other new officers elected were Gordon Stine, of Cable Oil Co., first vice president; G. F. Isley, Shell Oil Co., Inc., second vice president; and Earl Gray, of Petroleum Producers, secretary-treasurer. R. P. Brouthertin, Texas Co., and retiring chairman, presided at the meeting. New directors added were William H. Rouzer, Jr., of the K.M.A. Pressure-Maintenance Association, and James F. Gibbs of Panhandle Refining Co.

EQUIPMENT PROGRESS...

Gatke Has Complete Range Of Improved Clutch Facings

Improved asbestos clutch facings covering the complete range of industrial, as well as automotive service

requirements, are announced by the Gatke Corp., 228 North La Salle Street, Chicago.

Made of different material combinations and various methods of processing to meet operating conditions, these modern clutch facings are furnished in sizes from 14 ft. in diameter weighing 1,000 lb. and more, to tiny disks weighing less than an ounce.

Gear-toothed clutch facings with integrally molded teeth and cone-type clutch facings, as well as the conventional disk-type are available in all shapes and sizes.

It is claimed that the use of improved material combinations and special methods of processing results in more dependable performance, as well as greatly extended wear life.

High-Pressure Vertical Pump Introduced by Worthington

A new high-pressure vertical triplex power pump is supplied by Worthington Pump & Machinery Corp., Harrison, N. J., in eight sizes, for pressures up to 9,800 lb. and capacities up to 51 g.p.m. This pump is of the vertical triplex single-acting plunger type and particularly suited to applications where small capacities and high pressures are required, as for the operation of hydraulic presses, manufacture of plastics, for roll balancing in steel mills and, to an appreciable extent, in oil refineries on special process work.

This pump has no gears and is especially designed for use with built-in gear head motors, although it can be arranged for V-belt drive.

It is very compact and has high efficiency. One of the important features of its construction is that its plungers are outboard and there is a dry joint between the liquid cylinder and power frame thus eliminating the possibility of leakage of the liquid being pumped into the crankcase, effectively preventing contamination of lubricating oil.

TRADE LITERATURE

BROWN INSTRUMENT CO., Philadelphia, Pa.—Catalog 2204, containing useful information on Brown mechanical flow and liquid-level meters for indicating, recording, and controlling. All the vital facts concerning Brown mechanical flow meters are covered. The book contains a full description of flow and liquid-level meters such as automatic recording planimeter, automatic chart timing and micrometer screw setting. Besides a full description of the operating principle and features of the meters, the catalog contains pictures and schematic diagrams showing special applications of flow and liquid-level meters and general mounting dimensions.

ALLIS-CHALMERS MANUFACTURING CO., Milwaukee, Wis.—8-page bulletin (B6052-B) which concisely describes the complete line of the company's Lo-Maintenance motors in ratings from ¾ to 75 hp., open, enclosed, and splashproof types, and a.c. and d.c.

BABCOCK & WILCOX TUBE CO., Beaver Falls, Pa.—Technical Data Card 108A, a card-folder on chemical compositions of S.A.E. steels, reprinted in large, easily readable type, from the 1941 S.A.E. Handbook.

NATIONAL TECHNICAL LABORATORIES, South Pasadena, Calif.—A new booklet, "What Every Executive Should Know About pH." It defines the pH unit and describes its application to the oil industry. It is written not only for the executive in the front office but for the executive in the plant and field as well.

SPERRY-SUN WELL SURVEYING CO., 1608 Walnut Street, Philadelphia, Pa.—Descriptive folder explaining the design, operation and advantages of the new E-C Inclinometer, an electrochemical well-surveying instrument just introduced.

CATERPILLAR TRACTOR C., Peoria, Ill.—Form 6907, a booklet which lists and pictures many oil-field operations in which Caterpillar diesel tractors, diesel engines, and diesel-electric sets are featured.

Sperry-Sun Offers New Well Surveyor

One of the most progressive steps in the development of well-surveying methods is a new instrument, patented and perfected by the Sperry-Sun Well Surveying Co., Philadelphia, Pa. It adds another to an already long list of instruments devised to determine the degree and direction of deviation of bore holes in the petroleum and other industries. Among these instruments are such famous names as the Surwel Gyroscope, the Syfo, and H-K Inclinometers.

Cross-section of the E-C Inclinometer

The new product is named the E-C Inclinometer, this name being derived from the term electrochemical. Operated by dry-cell batteries on sound electrochemical principles, it opens up new possibilities in well surveys—and points the way to faster, more efficient drilling.

The outstanding virtue of the E-C Inclinometer is the fact that it simply cannot produce a false record since no record can be made until the instrument comes to rest at the depth where the information is desired. Another desirable feature is the speed at which the recordings are made. Having no clock, the E-C Inclinometer can be lowered and raised at a speed of 800-1,000 ft. per minute without damaging the instrument.

Within 45 seconds after the instrument comes to rest at the desired depth, the record is made and the E-C Inclinometer can be withdrawn or be lowered to other depths for the making of additional records.

Record Disk

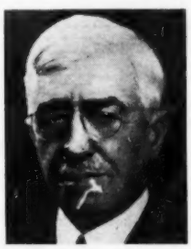
The E-C Inclinometer can be rented on a daily, 6-monthly and yearly basis. Rental charges for the E-C Inclinometer are reasonable.

The E-C Inclinometer is small, the outside diameter being only 1 ⅞ in.

Full details may be secured by writing the Sperry-Sun Well Surveying Co., 1608 Walnut Street, Philadelphia, Pa., or one of its branch offices.

John A. Roebling's Marks One Hundredth Anniversary

Leon Henderson, administrator of the Government's Office of Price Administration, was principal speaker last week at the celebration in Princeton, N. J., marking the 100th anniversary of the founding of John A. Roebling's Sons Co., Trenton, N. J.



William A. Anderson

Mr. Henderson addressed more than 100 editors of trade journals and magazines who came from all parts of the country to attend a dinner meeting commemorating the centenary of the founding of the Roebling company by John A. Roebling. The company built the famous Brooklyn Bridge, spun the cables for the George Washington Bridge linking New Jersey and New York, and the Golden Gate Bridge at San Francisco. At the present time the company is producing millions of dollars worth of wire rope and cables for airplanes and ships and other supplies for the national-defense program.

Other speakers at the dinner included William A. Anderson, Roebling president; Charles G. Williams, executive vice president, and John A. Roebling. Robert T. Bowman, public-relations director for the company, was toastmaster.

Ray Tennes Succeeds Father As Shafer Board Chairman

Ray P. Tennes, who for the past 7 years has served as a director and secretary-treasurer of the Shafer Bearing Corp., has been elected chairman of the board of directors. Mr. Tennes succeeds his father, the late M. J. Tennes, who served as chairman of the board since 1930. Mr. Tennes is the eldest of the three sons, all whom are officers and directors of the corporation.

In addition to his position as chairman of the board, Mr. Tennes will continue as treasurer of the corporation. W. L. Kinnaw, comptroller of the corporation, has been elected assistant treasurer-assistant secretary.

M. J. Tennes, Jr., is president of the corporation and is now on leave of absence, serving as captain in the U. S. Army Air Corps. J. F. Ditzell is vice president-general manager of the corporation.

J. S. Warren, Jr., Made Sales Engineer for Maloney

The Maloney Tank Manufacturing Co., Tulsa., announced the appointment of J. S. Warren, Jr., as sales engineer for the company in charge of the engineering department. He comes to them from the St. Louis office of the York Ice Machinery Co. with whom he has been with for some time as engineer. The Maloney company is expanding their operations with an endeavor to take on defense work, and Mr. Warren will devote all of his time to that part of their business.

BUSINESS NOTES

S. M. (Puny) Blevens, Tulsa, has joined the Larkin Packer Co. in a sales capacity, and will work out of the Tulsa office.

CLASSIFIED ADVERTISING

THE MARKET PLACE OF THE OIL INDUSTRY . . .

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LANCASTER, ALLWINE & ROMMEL
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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

LEASES ROYALTIES
PRODUCING OR NONPRODUCING
Texas, New Mexico, Oklahoma, Louisiana and Illinois
20 Years Experience
Inquiries Invited
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

FOR SALE: Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

NEW MEXICO
Oil and Gas Leases and Royalties.
ROY G. BARTON, Hobbs, N. M.

FOR LEASE.—159 acres situated Section 7, Township 6 north, Range 27, Beaver County, Oklahoma. S. L. Denhollem, 212 Alta, San Antonio, Texas.

EAST TEXAS Woodbine—Trinity sand wildcats starting on Major Company blocks offer quick play 10 to 50 for one bets. E. CROFT, PROCTOR, TEXAS.

THE
OIL PROPERTIES EXCHANGE
For Sale: Many Producing Oil Properties Royalties, Drilling Blocks, and Oil Investments of various sizes in Mid-Continent area. Contact us to Buy or Sell properties.
Alexander Bldg., Tulsa, Okla.

BLOCK of leases in Southwestern Oklahoma. Open for deal with parties able to drill well for acreage. Good Geology. Write Philo Dempsey, Roosevelt, Okla.

CRANE COUNTY fee land under Magnolia, Stanolind, leases, Sec. 18, B28. Jefferson G. Smith, 215 Littlefield Bldg., Austin, Tex.

NEW MEXICO
State Oil and Gas Leases
BUY leases on structures where major companies buy. One dollar per acre. 5c rentals, Ten-year term. Write today. Place a little bet on New Mexico.
HARRY S. WRIGHT
Farmington, New Mexico.

FOR SALE

One-half interest in desirable producing property in dolomite area of the Panhandle, Hutchinson County Texas. Well equipped and operated lease with 27 wells on 320 acres, all productive. Present owner in liquidation solicits inquiry from responsible brokers and operators interested in purchase of production on cash basis. Address

BOX A-680
The Oil and Gas Journal
Tulsa, Okla.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Help Wanted

YOUNG Pipe Line accountant, familiar with I.C.C. accounts. State experience and salary. Box A-661, The Oil and Gas Journal, Tulsa, Okla.

WANTED
SUPERVISOR, Lubricating Oil Department, Canadian Refinery. Young man with technical education and practical experience in modern Lubricating Oil Refinery. State in first letter age, marital status, education, experience, Nationality, Religion, present occupation and salary, and references. Address Box A-654, The Oil and Gas Journal, Tulsa, Okla.

SALES ENGINEER

Familiar with gas power equipment. Must be practical mechanic, preferably with some technical training. Box A-683, The Oil and Gas Journal, Tulsa, Okla.

WANTED: Young graduate engineer as assistant to refinery engineer. Two to four years' refining experience including drafting, refinery construction and maintenance. Location, southwest. Submit complete details of qualifications, salary desired, photograph, etc. Box A-670, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

NATURAL Gas Engineer — Technically trained—12 years' experience in solving transmission and distribution problems; estimating reserves; calculating peak days, load factors const. costs, anticipated earnings, etc. Authored articles for trade journals, gas associations, and taught courses in gas engineering. Desire to make change. Age 33. Address Box A-650, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM ENGINEER: Young man, college graduate, P.P.E. degree, draft classification 3-A. Three years' experience including service engineer, production engineer, and general field work. Desires position with drilling and production company as geologist, engineer, or scout. Box A-631, The Oil and Gas Journal, Tulsa, Okla.

REFINERY MANAGER and Superintendent, technically trained, eleven years practical experience, fair knowledge of production problems, also sales experience of refinery products. Location no object. Box A-672, The Oil and Gas Journal, Tulsa, Okla.

TO OIL Company President Somewhere: If you can employ geologist don't let 35 years of experience go to waste because American Men of Science say I am 58. L. D. Burling, Box 305, Waycross, Ga.

Mailing Lists

ROYALTY owners, Oil investors, Unit holders, Stockholders, Operating personnel of oil industry. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Okla.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

WE BUY & SELL all types of Oil and Gas Royalties. Sales restricted to registered dealers only. Grimes Royalty Co., Tulsa Loan Bldg., Tulsa, Okla.

MONTHLY asphalt royalty income and a rock asphalt deposit for sale. Write owner, Lewis Smyth, Uvalde, Texas.

SUBMIT your Oklahoma, Kansas, Texas, and Louisiana producing royalties. No SEC requirements if preliminary information complete. Address Box A-682, The Oil and Gas Journal, Tulsa, Okla.

Geophysical Service

LET US LOCATE your well with the Gravvitational Selector, the answer to the safe development of new pools. It is the quickest, the surest, the cheapest and gets RESULTS when other systems fail. Write Geologist, 14957 Lakewood Heights Boulevard, Lakewood, Ohio.

Ranches—Farm Lands

COLORADO Dude and Cattle Ranch near Rudi, priced 25% under appraised valuation. 660 acres pasture and hay land, large farm home, large barn and other farm buildings, 11 excellent cabins and lodge, Dude equipment. All buildings modern and fully equipped. Beautiful scenery, good fishing also deer and elk hunting in season. Established repeat business. Ill health prompts price of $18,500 (part cash) for quick sale. Write or wire. J.G.M., P.O. Box 1260, Tulsa, Okla.

LOUISIANA Farm for sale. Six adjacent counties producing oil. Recently leased for oil or gas for 5 years. 1026 acres of land. Fields fertile, timber (Hard Woods). Lease and ½ mineral rights go to buyer. Bisected by paved state highway. 150 miles NW of New Orleans. Reason for wanting to sell is illness. For inquiries, Address A. V. Boutte, Jr., 2536 S. Galvez St., New Orleans, La.

Business Opportunity

FOR LEASE
FILLING STATION in Oklahoma City, corner Exchange and Pennsylvania Avenues, desirable location in Industrial Section. 7,000 gals. underground storage. Write G. I. VAN DALL, 1300 Dewey, Bartlesville, Oklahoma.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guver, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

Legal Blanks

BURKHART'S legal blanks and general forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn. Wyo. Free catalog samples on request. Burkhart Ptg. & Sta. Co., 115 S. Cinn., Tulsa, Oklahoma.

Equipment Wanted

WANTED 100,000 ft. of good used 4, 6, 8, 10 and 12 inch pipe, plain or coupled. Write or wire Daniel A. Moritz Co., McKeesport, Pa.

WANTED—Any quantity of 10" 8 V. Thd. casing or line pipe couplings. Zanesville Tool & Supply Company, Zanesville, Ohio.

WANTED: One 85 H.P. Oil Field Boiler or one 125 Scotch Marine or Erie, 200# W.P. Oklahoma code. Box A-684, The Oil and Gas Journal, Tulsa, Okla.

HIGHEST cash prices paid for entire plants or individual production tools, milling machines, shapers, drill-presses, lathes, punch presses, electrical equipment and motors. Write us and a representative will call. COOK COUNTY MACHINERY CO., 1132 W. Lake St., Chicago, Ill.

WANTED: Heavy Type Squaring Shear to cut up to ½ inch Steel. Amarillo Junk-Westex Pipe Co., Box 727, Amarillo, Tex.

For Sale—Equipment

FOR SALE
Located one-half mile south of Shidler, Oklahoma, complete booster plant consisting of:

6—190 HP, Type 3, New Watts-Miller twin gas engines and two-stage, high and low, compressors.

2—70 HP, New Watts-Miller, Overhead Belt-driven engines.

Large quantity of new, unused extra parts for 190 HP New Watts-Miller Engines and Compressors; bearings, pistons, rings, valves, etc.

1—Steel building, 222' long X 32' wide.

1—Steel auxiliary building, 30' X 32' wide. Both buildings are braced with 6" I-beams.

A number of steel buildings with wood frames.

2—Scrubber tanks, one 8X5 and one 3X4.

Large stock of fittings, from 2" including 16", flange and screw.

3—Two-pass brass tube cooling coils, and

3—Three-pass brass tube cooling coils, Griscom and Russel make.

Approximately one and one-half miles of mesh wire fencing.

A quantity of electrical equipment, including generator.

22—Foamite fire extinguishers.

1—Extra large Foamite fire extinguisher tank, mounted on wheels, with 50' hose attached.

2—75 HP, Chicago Pneumatic Engines and Compressors, located near Wewoka, Oklahoma.

If interested, please write
KAHAN PIPE & SUPPLY CO.
P. O. Box 682, Tulsa, Oklahoma,
or call 4-6537, Tulsa, Oklahoma.

FOR SALE: 4200 Ft. 6⅝" Drill Pipe with full hole Tool Joints. Good condition. Lucey Products Corp., Tulsa, Okla.

120 HP Clark drilling engine with Moore steel derrick, Parkersburg drilling outfit. Located at Graham, Texas. Write Box 1098, Shawnee, Oklahoma.

FOR SALE Cheap, At Oklahoma City Garage: 9 new 40 x 8, 12-ply Acme tires in original wrappers. Patridge, Cities Service Oil Company, Bartlesville, Okla.

FOR SALE: 1—#25 Southwestern Distillation Unit completely overhauled with or without pumps and absorber, will make 5000 gal. gasoline per day. W. S. Smith, 523 Thompson Bldg., Tulsa, Okla. Phone 2-5473.

REFINERY for sale, well equipped, large capacity, no junk, priced right for cash. Deal with principal at Box 1084, Overton, Texas.

BOILERS FOR SALE: Three 100 H.P., Two 85 H.P., One 75 H.P. Inspection certificates. Lucey Products Corp., Tulsa, Okla.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
8 Lines	2.80	4.80	6.80	8.80
9 Lines	3.15	5.40	7.65	9.90
10 Lines	3.50	6.00	8.50	11.00

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Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.